W. B. No. 1269

Received June 1939
Issued March 1940

UNITED STATES DEPARTMENT OF AGRICULTURE
WEATHER BUREAU

MONTHLY WEATHER REVIEW

[Supplement No. 40]

DATA FROM AEROLOGICAL SOUNDINGS AT FAIRBANKS, ALASKA, DURING THE WINTERS 1936-37 AND 1937-38

Conducted by the Weather Bureau
under Bankhead-Jones Special Research Fund

Prepared for publication by the Air Mass Analysis Section
Meteorological Research Division, Weather Bureau

Submitted for publication June 1939

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON: 1940

For sale by the Superintendent of Documents, Washington, D. C. - - - - - - - - - - - - - - - - Price 10¢

SUPPLEMENTS TO THE MONTHLY WEATHER REVIEW

During the summer of 1913 the issue of the system of publications of the Department of Agriculture was changed and simplified so as to eliminate numerous independent series of bureau bulletins. In accordance with this plan, among other changes, the series of quarto bulletins—letters from A to Z—and the octavo bulletins—numbered from 1 to 44—formerly issued by the United States Weather Bureau have come to their close.

Contributions to meteorology such as would have formed bulletins are authorized to appear hereafter as supplements of the MONTHLY WEATHER REVIEW. (Memorandum from the Office of the Assistant Secretary, May 18, 1914.)

These supplements comprise those more voluminous studies which appear to form permanent contributions to the science of meteorology and of weather forecasting, as well as important communications relating to the other activities of the United States Weather Bureau. They appear at irregular intervals as occasion may demand, and contain approximately 100 pages of text, charts, and other illustrations.

Owing to necessary economies in printing, and for other reasons, the edition of SUPPLEMENTS is much smaller than that of the MONTHLY WEATHER REVIEW. SUPPLEMENTS will be sent free of charge to cooperating meteorological services and institutions and to individuals and organizations cooperating with the Bureau in the researches which form the subject of the respective supplements. Additional copies of this SUPPLEMENT may be obtained from the Superintendent of Documents, Washington, D. C., to whom remittances should be made.

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PREFACE

By HORACE R. BYERS

[U. S. Weather Bureau, Washington, D. C.]

The process of formation of cold continental air in the northern interior of Canada and Alaska during the winter was investigated early in 1936 by Wexler, on the basis of theoretical considerations and scattered aerological ascents. A theory of the formation of these air masses by radiational cooling of originally warmer air was advanced, but it was evident that additional data from the upper air, and measurements of nocturnal terrestrial radiation during the polar night were needed. Furthermore, a study of the formation of cold anticyclones and the release of cold outbreaks into the latitudes of the United States was considered desirable.

To provide the necessary data, there was established, with funds made available through the Bankhead-Jones Act of 1935, a project for obtaining airplane soundings of the upper air, and terrestrial radiation measurements twice daily, during the winter 1936–37 at Fairbanks, Alaska. The Meteorological Service of Canada cooperated by conducting daily airplane and pilot-balloon soundings at Fort Smith, Northwest Territory. Snow-surface temperatures were also measured at these stations and at the aerological stations in the northern part of the United States. Terrestrial radiation measurements were likewise made at Fargo, N. Dak. A small research staff was assigned to the Meteorological Research Division of the Weather Bureau in Washington to analyze the data. Unfortunately the winter was one of record high temperatures in Alaska and northwestern Canada; and the intense cooling which was expected did not occur, except on a few occasions, during the six months of observations. This was especially the case at Fairbanks. At about this time, the radiosonde was in a developmental stage and it was desirable to have some means of testing it in the field and gaining experience in its use. An opportunity to do this, and at the same time to obtain additional winter sounding data at Fairbanks, was provided by continuing the aerological soundings through the winter of 1937–38. The data obtained by the radiosonde from the higher levels was particularly helpful in the research. The program for the second winter, then, included daily radiosonde ascents, checked every third day by an airplane ascent. This occasional comparison of airplane and radiosonde was necessary due to the inadequate knowledge at that time of radiosonde technique and apparatus and the rather primitive stage of development of the instrument.

During the first winter, the airplane flights were started on September 16, 1936, and were scheduled to be taken twice daily until March 15, 1937. Forty-five scheduled ascents could not be made, mainly due to low clouds or fog (there were no radio aids to navigation available), and a total of 316 soundings were completed. During the second winter, the airplane observations began on September 16, 1937, and the radiosonde observations covered the period from October 7, 1937, to March 16, 1938, making a total of 134 radiosonde and 60 airplane soundings, or a total of 510 soundings of both types during the two winters.

William B. Drawbaugh was in charge of the soundings during both years and was assisted in the second year by Leroy A. Coffin. The airplane flights were made by a private contractor, Charles H. Gillian.

Employed on this project at Washington during the first year were A. K. Showalter, D. J. Stevlingson, and R. J. Powers. During the second year and part of a third year, P. J. Harney, G. S. Mitchell, and J. H. Calvert were engaged on this project. H. Wexler was assigned to the Massachusetts Institute of Technology during the fiscal year beginning July 1, 1937, to coordinate the studies of the release of cold waves and formation of polar anticyclones with the work on anticyclogenesis being carried on at that institution by Prof. C. G. Rossby.

Two general reports based on the analysis of the data obtained are now in the course of preparation. One will discuss the terrestrial radiation measurements in relation to the free-air temperatures. The other will present the data in a form to show the salient features of the daily and mean circulations and air-mass interactions over the northern part of the continent.

The following papers relating to the project have already been published:

H. Wexler, Cooling in the Lower Atmosphere and the Structure of Polar Continental Air, MONTHLY WEATHER REVIEW, vol. 64, April 1936. [Published prior to the beginning of the project.]

H. Wexler, Absorption of Radiation by Water Vapor as Determined by Hettner and by Weber and Randall, MONTHLY WEATHER REVIEW, vol. 65, March 1937.

J. C. Ballard, Some Outgoing Radiation and Surface Temperature Measurements at Fargo, N. D., Transactions, American Geophysical Union, 18th Annual Meeting, April 1937.

H. Wexler, Formation of Polar Anticyclones, MONTHLY WEATHER REVIEW, vol. 65, June 1937.

Another paper, by Wexler, entitled "Polar Anticyclogenesis Caused by Lateral Mixing" representing work done at the Massachusetts Institute of Technology, is in manuscript form and early publication is expected.

Meanwhile, it is deemed advisable to make available the original data for those who may wish to make further deductions from them, and this is done in the tables herewith.

In tables 1 and 2 are presented the data for significant levels for each flight made during 1936–37 and 1937–38, respectively. Tables 3 and 4 represent the data for various standard levels, including also the winds obtained from pilot-balloon observations. The morning and afternoon observations of the first winter are given separately in table 3. In table 2, the soundings by airplane and radiosonde are separated. These flights were nearly all made in the morning.

Geographical location.—Fairbanks, located at latitude 64°51′ N., longitude 147°52′ W., is a typical interior Alaska station. It is about equally distant (approximately 300 miles) from the Pacific Ocean, Bering Sea, and Arctic Ocean. Although having an elevation of only about 400 feet, meteorologically speaking it is cut off from the Pacific Ocean by the Alaskan Range, a massive chain of mountains about 100 miles south of Fairbanks, the highest peak of which is Mount McKinley, 20,300 feet. The Endicott Mountains near the Arctic Ocean form a slightly less important meteorological barrier to the north. This same range of mountains lies to the east.

The station is on the Tanana River which drains by way of the Yukon River into the Bering Sea through country that is for the most part rather low in elevation. This lowland, however, is interspersed with small ranges, such as the Kokrine Hills and the Kuskokwim Mountains, which lie about halfway between Fairbanks and the Bering Sea. Just to the north of Fairbanks, between the Tanana and Yukon rivers, are the Tanana Hills, "a rough region with gentle rolling hills and domes reaching a maximum altitude of 5,000 feet." [1]

[1] Quoted from: R. L. Frost, A Climatological Review of the Alaska-Yukon Plateau, MONTHLY WEATHER REVIEW, vol. 62, August 1934.

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*

[Times are for 150th meridian]

H=Height in decameters above sea level. T=Temperature in degree centigrade.
P=Pressure in millibars. R=Relative humidity (percent).

H	P	T	R
Sept. 16, 4:40 p. m.			
14	992	14.3	48
18	987	14.8	48
67	930	10.9	52
148	844	5.1	67
189	803	1.6	79
239	755	−3.1	100
255	740	−3.6	100
261	734	−4.6	100
295	703	−2.6	45
330	672	−3.6	52
407	608	−8.6	89
418	600	−8.8	89
443	581	−9.8	46
457	571	−10.4	46
524	524	−14.7	96
571	492	−18.2	100
8/10 As, W (rime) 2,390–2,550 m; 8/10 Ac, W, 2,550–2,610 m; 8/10 Ac, W, from 5,710 m.			
Sept. 17, 5:07 a. m.			
14	992	4.3	87
26	976	7.3	70
56	942	7.6	64
69	927	7.8	64
93	902	6.8	64
167	824	1.5	82
211	779	−2.0	94
266	725	−3.9	94
292	703	−5.3	86
330	670	−8.4	92
351	652	−10.2	99
377	629	−12.3	100
387	621	−11.8	99
428	589	−12.7	98
465	560	−14.1	97
496	538	−14.1	75
534	513	−16.6	87
541	508	−17.0	88
8/10 As, W, (frost) from 2,920 m; 10/10 As, W, 3,510–3,770 m; As, unknown, (frost) from 5,340 m; 8/10 As, from 5,340 m.			
Sept. 17, 4:31 p. m.			
14	988	12.6	68
58	937	11.3	55
78	914	9.8	55
161	827	3.8	78
212	775	0.1	98
275	717	−3.3	100
296	699	−3.8	96
343	658	−6.5	100
417	598	−11.1	96
431	588	−11.5	97
486	546	−14.8	94
504	534	−15.7	94
528	518	−16.6	92
10/10 As, W, 2,120 to 2,750 m; 8/10 As, SW, (clear, hard ice) 3,430 to 5,040 m.			
Sept. 18, 5:00 a. m.			
14	986	6.6	91
34	966	9.4	75
57	939	8.4	75
75	918	8.3	76
140	843	4.0	86
178	810	2.0	89
205	782	0.2	82
243	746	−3.4	100
255	734	−3.4	79
314	682	−5.7	73
345	654	−8.5	83
394	614	−10.7	75
434	582	−14.1	79
510	526	−18.5	67
541	506	−21.0	92
8/10 Sc, W, 2,465 to 2,800 m.			
Sept. 18, 4:34 p. m.			
14	984	12.8	50
42	954	10.4	54
54	942	10.4	57
86	906	7.5	66
102	886	7.7	69
112	876	7.9	68
178	810	2.8	85
282	709	−4.9	95
304	690	−5.2	84
357	644	−9.2	94
391	616	−9.6	54
448	572	−14.9	56
528	513	−20.2	48
1/10 Ci, W; Few St, unknown.			
Sept. 19, 5:07 a. m.			
14	985	−1.0	88
32	964	4.7	63
65	926	5.0	63
72	917	5.9	64
82	906	6.2	65
110	875	4.2	76
124	860	4.6	73
134	851	4.9	68
156	827	3.6	70
167	816	3.4	66
189	795	1.9	67
204	782	1.5	66
286	704	−4.9	77
296	696	−4.9	73
305	687	−5.9	72
317	677	−5.9	69
329	667	−7.4	78
341	656	−8.2	77
365	636	−10.0	77
378	626	−10.0	75
454	567	−15.4	58
527	514	−21.5	59
1/10 Cs, unknown.			
Sept. 19, 4:51 p. m.			
14	985	12.0	48
77	914	7.4	60
99	889	7.4	63
176	810	1.1	96
183	804	2.0	65
238	749	−1.2	65
291	702	−5.3	74
399	612	−13.4	96
416	598	−14.0	87
484	546	−19.6	91
490	542	−19.4	75
535	510	−22.7	58
3/10 As, SE, from 4,660 m.			
Sept. 20, 5:10 a. m.			
14	981	−2.0	100
19	976	3.9	73
26	967	3.9	63
58	931	5.2	64
67	922	6.6	63
159	822	0.6	91
164	818	0.9	79
198	784	−1.3	84
218	764	−1.7	79
227	756	−1.5	72
241	743	−1.5	60
332	662	−7.2	55
412	597	−13.4	75
479	546	−18.8	78
547	498	−22.6	86
1/10 Cs, unknown; Patches light ground fog ending 7:15 a. m.			
Sept. 20, 5:09 p. m.			
14	978	13.0	45
22	969	13.1	45
97	885	6.8	62
185	795	−0.6	99
187	793	−0.2	87
193	788	−0.9	97
202	778	0.8	55
313	676	−6.5	58
414	593	−13.2	96
430	580	−13.0	87
449	567	−13.6	78
546	499	−21.5	75
3/10 As, NE, 1,560–1,720 m; 2/10 As, ENE, 3,935–4,410 m.			
Sept. 21, 5:18 a. m.			
14	980	−2.4	100
22	970	4.6	71
26	965	5.0	65
34	936	5.8	62
46	942	5.8	58
61	925	7.0	57
94	890	4.5	71
108	877	4.5	74
123	858	3.6	70
140	843	3.7	67
152	832	4.6	54
209	775	0.2	65
290	700	−5.0	73
312	680	−6.0	59
388	616	−10.4	52
490	540	−17.4	83
515	522	−19.1	69
548	499	−21.7	73
2/10 St. ENE, at 2,965 m. (estimated).			
Sept. 21, 4:32 p. m.			
14	983	13.6	43
57	934	9.3	48
121	864	4.0	69
141	844	4.4	67
224	764	−2.0	83
278	715	−5.1	89
294	700	−6.5	64
356	646	−9.5	63
400	610	−12.8	65
482	548	−17.7	85
544	506	−18.0	89
2/10 St, unknown, 2,780 m. (estimated); 6/10 As, from 5,440 m.			
Sept. 22, 5:15 a. m.			
14	990	−2.9	100
16	985	1.6	90
21	980	1.9	85
32	968	4.3	70
39	960	4.3	74
55	940	6.5	68
61	933	6.9	61
113	876	4.7	65
206	781	−0.1	79
263	727	−4.5	80
326	672	−9.0	95
330	668	−8.8	77
414	599	−15.0	94
456	566	−16.8	74
547	503	−22.6	91
3/10 St, NNE (estimated) 3,200 m; 2/10 Cs, unknown.			
Sept. 22, 5:02 p. m.			
14	993	11.2	49
21	983	12.4	48
90	904	7.4	58
99	894	7.4	61
190	800	1.1	75
295	702	−7.3	92
356	650	−11.3	96
377	634	−12.5	88
388	624	−12.0	77
415	603	−13.4	66
424	597	−13.4	61
488	549	−19.0	56
546	507	−22.7	74
2/10 As, unknown, at 3,475 m. (estimated); bare at 1,505 m.			
Sept. 23, 5:15 a. m.			
14	995	−3.7	95
35	970	8.0	64
44	960	8.3	59
54	949	9.4	56
57	945	9.3	55
87	912	7.4	59
99	898	7.3	65
111	885	6.4	69
128	866	5.8	67
186	806	0.6	75
251	742	−4.4	94
331	672	−11.1	99
346	657	−10.6	63
447	584	−16.8	64
521	522	−22.4	77
Few Ci, N; 7/10 St, ENE, estimated at 3,180 m; light ground fog.			
Sept. 23, 4:39 p. m.			
14	992	11.0	55
22	983	12.6	53
41	961	12.4	46
139	853	3.8	60
233	759	−3.8	92
240	752	−4.0	82
312	686	−10.5	99
349	654	−10.3	59
366	641	−11.3	53
445	578	−17.1	51
536	512	−24.0	69
3/10 St, unknown, 3,120–5,360 m; few Ci, unknown.			
Sept. 24, 5:07 a. m.			
14	998	−5.0	94
26	983	3.9	72
33	975	3.9	69
36	971	4.3	62
58	944	4.5	62
67	935	3.6	63
76	924	4.3	57
83	916	4.3	55
92	906	3.8	55
102	896	4.6	37
130	864	2.7	37
140	852	2.6	37
235	759	−3.9	55
321	679	−10.8	83
344	658	−11.0	73
395	616	−14.3	69
448	575	−17.6	67
544	506	−24.2	66
Few Ci, N; patches light ground fog ended 7:45 a. m.			
Sept. 24, 4:38 p. m.			
14	1,001	10.8	49
20	993	11.3	47
105	898	6.0	45
188	810	0.3	59
262	736	−6.1	64
360	650	−12.8	68
372	639	−12.9	66
453	574	−18.3	53
541	510	−23.9	53
Cloudless.			
Sept. 25, 5:15 a. m.			
14	995	6.0	58
18	990	6.3	57
28	978	8.6	50
41	962	9.1	46
50	953	9.6	43
59	943	9.6	43
101	897	6.0	52
117	878	5.7	50
178	816	2.1	43
204	788	1.4	33
234	760	−0.2	32
317	685	−6.8	28
400	616	−11.6	21
413	606	−11.8	21
455	573	−14.1	20
534	516	−18.7	15
9/10 As, SE, from 3,240 m.			
Sept. 25, 4:04 p. m.			
14	985	13.2	50
21	976	13.4	48
57	936	11.0	49
115	873	7.5	59
121	867	7.8	56
215	772	0.0	75
291	703	−5.3	100
308	687	−5.3	89
385	622	−10.6	86
392	617	−10.7	79
402	608	−11.7	80
463	562	−15.4	81
534	512	−20.8	86
Moderate turbulence, surface to 3,920 m; 5/10 St, S, from 2,605 m.			
Sept. 26, 5:40 a. m.			
14	984	8.0	70
22	973	12.8	53
57	934	10.8	55
67	924	11.5	50
104	885	9.1	53
109	880	9.1	52
160	826	5.2	58
246	743	−2.2	90
316	680	−7.2	99
382	624	−9.9	79
459	565	−16.2	91
553	499	−23.2	89
9/10 As, S, 2,645 to 4,835 m; sprinkling 6:20 to 7 a. m. (observed at ground).			
Sept. 26, 4:28 p. m.			
14	994	8.3	82
89	906	3.0	100
108	885	1.9	99
127	866	1.6	94
212	778	−3.3	85
290	706	−7.8	84
358	645	−11.9	87
441	580	−16.0	65
3/10 St, unknown, 495–1,490 m; strong turbulence, surface to 890 m; 10/10 Sc, S, 2,900–3,580 m.			
Sept. 27, 5:42 a. m.			
14	1,008	0.6	95
24	994	4.6	76
50	964	4.6	73
120	885	0.6	84
128	878	0.9	73
210	790	6.2	95
218	784	−5.6	92
280	724	−9.4	85
289	716	−9.3	75
350	662	−13.2	79
363	650	−13.2	71
444	586	−19.2	79
523	525	−25.7	63
7/10 Sc, SW, 1,985–2,450 m; 2/10 Cs, unknown.			
Sept. 27, 4:22 p. m.			
14	1,011	8.6	81
20	1,002	10.4	74
29	992	10.3	71
72	941	7.2	71
131	878	2.3	84
136	871	2.3	81
178	826	−1.2	100
187	818	−1.9	100
228	776	−4.6	100
233	772	−4.4	92
290	718	−8.8	100
302	707	−9.3	100
359	656	−11.3	79
370	648	−11.1	69
441	590	−16.3	79
502	546	−20.1	72
538	520	−22.8	75
8/10 St, SW, 1,870–2,280 m; 8/10 St, SW, 2,900–3,020 m; light rain base 1,310 m; sprinkling 5 to 7:20 p. m.			
Sept. 28, 5:39 a. m.			
14	1,012	3.3	96
15	1,009	5.4	79
21	1,001	5.1	73
31	989	6.4	69
35	972	6.8	64
82	930	5.1	78
143	862	0.4	90
161	843	−0.8	90
169	834	−0.8	71
261	744	−7.6	87
288	718	−9.8	89
300	708	−10.0	92
308	699	−9.2	69
318	692	−9.2	64
398	624	−13.6	79
465	572	−17.6	47
516	534	−21.2	31
7/10 As, W, 2,875–3,055 m.			
Sept. 28, 4:13 p. m.			
14	1,011	11.8	51
59	957	7.5	59
125	883	1.7	76
196	808	−3.1	84
220	786	−3.5	72
256	750	−5.8	64
263	743	−6.2	63
270	736	−5.4	43
306	704	−5.7	36
360	656	−9.4	27
376	643	−9.7	25
425	603	−12.9	20
484	560	−17.6	20
541	518	−19.9	20
2/10 As, W, 1,775–3,635 m; 1/10 Cs, unknown.			

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H=Height in decameters above sea level. P=Pressure in millibars. T=Temperature in degree centigrade. R=Relative humidity (percent).

H	P	T	R
Sept. 29, 5:45 a. m.			
14	1,008	−2.3	100
42	972	7.7	50
92	914	4.4	54
113	891	6.4	42
125	879	6.4	32
174	828	4.0	30
182	821	4.4	29
256	748	1.5	27
323	688	−4.4	34
383	637	−8.8	38
448	587	−10.1	28
452	583	−9.7	32
539	520	−16.7	68
6/10 As, W, from 5,390 m.			
Sept. 29, 4:08 p. m.			
14	1,004	14.0	38
89	918	8.9	38
96	910	9.3	34
122	881	8.8	29
178	824	6.1	21
193	810	5.1	21
205	797	5.3	22
254	750	2.2	21
298	710	0.1	46
329	684	−2.4	69
406	620	−7.3	85
442	592	−9.8	77
472	570	−10.2	62
498	550	−12.4	73
505	544	−12.3	72
541	520	−14.5	72
6/10 Cl, W; few As, W.			
Sept. 30, 5:56 a. m.			
14	1,002	−0.5	71
46	962	9.7	34
92	910	7.9	34
100	902	8.0	33
171	828	8.4	28
250	744	3.1	49
322	688	−1.8	61
373	644	−5.3	71
398	624	−6.4	68
454	581	−7.9	33
471	569	−9.7	29
535	524	−13.4	23
9/10 As, W.			
Sept. 30, 4:09 p. m.			
14	996	14.7	37
32	974	12.8	36
45	961	13.3	35
70	931	11.8	32
79	922	11.7	32
111	887	9.1	33
128	866	8.9	30
138	857	9.6	26
195	799	7.0	24
262	735	2.0	53
314	689	−1.4	49
325	680	−1.0	39
351	658	−1.9	28
363	648	−1.9	25
432	594	−7.4	22
526	525	−14.3	18
5/10 Cs, W.			
Oct. 1, 5:52 a. m.			
14	992	−2.4	87
31	970	5.8	58
47	953	6.0	48
70	928	7.3	39
88	908	7.4	34
143	850	4.3	37
162	830	6.8	26
191	801	7.0	21
232	764	5.2	16
312	692	−1.2	22
326	680	−1.2	25
378	635	−2.9	19
444	584	−8.3	15
540	517	−14.8	19
1/10 Cs, SE; Few As, unknown.			
Oct. 1, 4:17 p. m.			
14	988	10.0	38
54	940	6.1	46
59	935	6.5	46
74	918	6.4	46
128	860	2.9	49
143	845	3.0	47
153	836	5.6	42
204	785	2.6	51
220	770	2.4	38
233	758	1.2	36
244	748	1.2	35
264	730	−0.4	31
276	719	−0.5	31
365	643	−6.1	34
394	620	−9.0	40
453	575	−12.0	43
532	518	−18.3	43
2/10 Cs, SE.			
Oct. 2, 5:50 a. m.			
14	987	−3.8	77
20	978	1.8	64
28	970	1.7	60
39	956	2.8	55
56	938	6.4	50
104	885	3.8	55
119	870	4.1	56
139	850	3.8	57
153	837	5.7	41
239	754	0.1	54
306	694	−4.8	64
371	638	−8.8	66
397	618	−11.9	72
407	610	−11.9	69
422	599	−12.8	70
436	588	−12.2	61
478	557	−15.1	56
492	548	−15.1	51
517	530	−16.6	46
536	516	−18.6	45
Few Cl, unknown.			
Oct. 2, 4:05 p. m.			
14	984	8.9	37
65	924	5.0	43
76	912	6.5	44
94	891	6.5	46
182	800	0.7	63
249	735	−2.4	70
296	694	−5.2	73
300	690	−5.0	63
312	681	−5.1	63
365	636	−7.6	65
455	567	−14.0	66
475	552	−14.0	61
531	512	−18.2	56
Few Cl, unknown; moderate turbulence, surface to 940 m.			
Oct. 3, 6:10 a. m.			
14	975	−4.0	82
21	965	1.2	63
37	945	1.1	56
64	914	3.8	56
116	857	0.4	71
164	808	−1.5	91
182	790	−1.2	82
249	726	−4.4	71
261	714	−4.0	62
278	700	−4.9	61
324	660	−9.2	69
369	624	−11.3	59
395	603	−11.7	55
471	546	−16.6	57
534	503	−20.6	57
2/10 As, E; few St, E, not estimated.			
Oct. 3, 4:14 p. m.			
14	979	5.5	44
65	919	2.2	47
70	912	2.4	48
83	899	1.7	50
92	889	2.1	53
161	816	−1.9	87
203	774	−4.4	100
235	744	−6.5	100
244	735	−5.4	84
251	728	−5.7	86
259	721	−5.6	56
288	695	−6.7	32
306	680	−6.7	26
362	632	−12.0	23
379	618	−12.0	22
452	563	−17.2	19
524	511	−20.7	17
7/10 St, E, (rime) 2,030–2,350 m.			
Oct. 4, 5:44 a. m.			
14	987	−8.0	74
20	978	−3.6	59
54	939	−4.4	58
75	914	−4.6	59
134	848	−4.9	67
142	840	−4.1	56
183	798	−4.5	62
204	776	−4.8	32
248	732	−7.4	27
283	701	−9.9	26
366	628	−14.2	22
388	609	−15.8	35
427	580	−17.3	39
434	576	−18.0	40
449	565	−19.6	43
475	545	−21.1	47
487	536	−21.4	37
517	516	−22.6	34
Cloudless.			
Oct. 4, 3:35 p. m.			
14	987	5.2	33
68	923	−1.0	32
138	845	−6.3	35
157	825	−4.7	35
181	799	−5.6	32
220	761	−6.1	28
257	725	−8.0	26
288	697	−10.2	27
306	682	−10.1	29
368	628	−13.6	42
373	624	−13.3	40
379	620	−13.8	37
439	574	−18.0	35
515	520	−23.6	36
1/10 St, unknown, 1,940–2,380 m; fog in valleys to north.			
Oct. 5, 5:52 a. m.			
14	980	−3.3	46
62	922	−2.6	41
71	912	−1.6	39
145	832	−1.2	52
171	805	−1.7	71
218	759	−4.5	92
235	743	−4.5	83
287	696	−8.8	85
296	686	−8.9	79
358	634	−14.1	85
376	620	−13.8	77
459	556	−18.5	47
475	544	−18.5	41
496	529	−19.8	38
518	514	−19.8	32
536	502	−20.9	30
8/10 St, S, 2,095–2,855 m; 7/10 Cs, unknown.			
Oct. 6, 6:36 a. m.			
14	975	−4.2	60
16	972	−3.5	58
55	925	−6.2	61
79	899	−6.7	64
98	876	−8.4	70
126	846	−8.6	77
130	841	−8.0	77
184	785	−10.3	79
192	774	−8.8	73
224	744	−10.6	75
232	738	−10.2	73
240	730	−10.3	73
278	695	−10.7	66
355	628	−16.0	90
361	624	−16.1	85
370	616	−15.7	66
426	572	−17.7	45
458	548	−20.1	37
521	503	−23.5	29
5/10 St, NW, 1,625–2,525 m; 8/10 As, NW, 3,550–3,715 m.			
Oct. 6, 3:41 p. m.			
14	984	−4.0	44
63	923	−8.1	53
135	841	−12.1	72
172	802	−12.4	80
185	789	−11.1	82
196	778	−11.5	83
202	772	−11.2	68
272	705	−13.0	65
280	698	−12.0	53
330	654	−13.4	34
388	607	−16.4	26
458	553	−19.9	24
524	506	−23.4	23
1/10 St, unknown (not estimated).			
Oct. 7, 6:34 a. m.			
14	992	−13.0	69
31	970	−9.1	58
55	942	−10.2	55
72	919	−9.3	53
142	840	−11.1	84
159	823	−10.3	87
191	789	−11.4	88
227	754	−10.0	60
250	732	−11.2	60
259	725	−11.0	42
269	715	−11.0	36
317	672	−13.2	24
397	605	−16.8	18
426	582	−19.1	44
456	558	−21.2	32
529	507	−26.1	29
2/10 St, NE, 1285 to 1,495 m; 1/10 As, SW, 3,305 m (estimated); 3/10 Cs, SW.			
Oct. 7, 3:48 p. m.			
14	996	−5.2	40
72	925	−7.4	47
130	860	−10.2	64
153	835	−9.8	57
187	799	−10.6	90
225	760	−9.6	85
237	749	−10.2	79
266	722	−9.8	40
289	700	−12.3	39
302	688	−12.3	40
380	620	−17.5	75
393	610	−17.5	78
418	590	−20.3	88
454	564	−22.9	90
518	516	−26.3	70
3/10 St, unknown, 2,060–2,210 m; 8/10 As, SW, 4,180–4,540 m (hard ice ¼ in).			
Oct. 8, 6:55 a. m.			
14	1,000	−18.5	85
36	969	−7.0	84
44	959	−6.9	74
65	932	−7.9	81
71	926	−7.2	88
92	902	−7.9	85
102	889	−5.8	83
115	874	−5.8	73
132	855	−3.5	73
149	836	−3.2	76
194	791	−5.3	98
214	770	−5.9	63
243	742	−6.1	38
275	711	−8.5	31
298	690	−10.3	31
317	673	−10.3	29
354	643	−11.8	26
430	583	−16.8	28
518	518	−23.4	30
2/10 Cs, SW; 2/10 St, unknown.			
Oct. 8, 3:42 p. m.			
14	992	−0.5	47
44	954	−1.0	48
51	946	−0.8	48
67	928	−0.8	49
86	906	−2.0	57
101	889	1.2	61
152	835	0.0	80
196	790	−2.2	87
282	710	−7.4	95
296	706	−7.2	90
303	699	−8.7	93
315	680	−9.0	90
380	625	−12.3	95
455	566	−17.0	94
465	559	−17.2	90
530	512	−21.4	93
3/10 As, from 3,240 m.			
Oct. 9, 6:27 a. m.			
14	987	−2.7	87
32	966	6.3	64
39	958	6.3	64
73	918	5.0	71
88	902	7.4	58
119	868	6.4	56
193	794	0.9	69
273	717	−5.4	91
281	711	−5.3	87
349	653	−10.6	100
444	576	−15.9	83
545	503	−24.4	93
7/10 St, S, 2,875 to 3,475 m.			
Oct. 9, 3:38 p. m.			
14	988	8.0	63
21	980	11.5	53
68	926	9.0	57
76	916	10.3	53
83	910	10.3	46
149	840	5.1	51
236	756	−0.5	58
294	702	−5.7	60
308	690	−5.7	60
369	638	−11.1	61
444	579	−16.8	69
470	558	−18.0	72
520	522	−18.8	47
536	512	−20.9	46
9/10 As, SW, from 4,140 m.			
Oct. 10, 6:37 a. m.			
14	984	2.1	98
21	975	5.8	94
59	930	3.7	100
76	910	4.4	92
121	860	1.7	98
206	774	−2.2	99
214	767	−2.5	93
236	745	−3.8	98
268	715	−4.0	90
297	690	−6.2	98
309	679	−6.3	95
370	628	−10.0	100
432	580	−13.3	85
472	550	−16.8	96
489	538	−17.8	92
545	499	−21.3	81
10/10 St, S, 635–3,885 m; rain at ground from 6:37 to 7:30 a. m.			
Oct. 10, 3:49 p. m.			
14	993	1.7	89
45	954	0.3	100
60	936	0.4	94
80	914	3.8	91
153	836	0.4	100
158	830	0.9	88
184	803	−0.4	89
209	778	−2.0	85
276	715	−5.8	86
358	643	−11.6	92
424	590	−15.9	90
456	566	−18.9	97
470	555	−18.9	96
476	551	−18.7	69
531	512	−21.6	60
3/10 St, 380–1,040 m; 7/10 St, S, 1,350–1,530 m; 7/10 St, S, at 2,880 (estimated); 7/10 As, SW, 4,340 (estimated); 10/10 As, SW, 4,560–4,700 m.			
Oct. 11, 6:16 a. m.			
14	990	−4.8	100
26	974	2.6	89
31	968	2.8	86
46	949	6.3	71
65	928	6.2	69
81	910	5.0	67
88	902	5.2	62
180	805	−1.0	75
185	800	−1.1	75
219	767	−3.3	80
224	762	−3.3	74
232	755	−3.6	74
237	750	−3.6	54
302	690	−8.6	74
349	650	−11.0	74
427	587	−16.9	78
475	550	−19.9	87
524	516	−22.5	42
1/10 As, SE; light ground fog.			
Oct. 11, 3:39 p. m.			
14	987	2.6	92
21	977	5.9	72
54	939	5.4	70
74	916	5.0	66
88	900	3.6	71
96	894	3.6	70
102	887	3.9	66
169	818	0.3	63
241	748	−5.1	97
244	744	−5.2	97
261	728	−5.4	67
310	684	−8.3	61
354	646	−11.7	72
365	638	−11.8	85
408	603	−14.1	97
473	554	−17.2	98
525	517	−20.2	94
10/10 As, SE, 2,410 to 2,440 m; 10/10 As, SE, 4,080–4,730 m; moderate turbulence from 4,020 m.			

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H=Height in decameters above sea level. P=Pressure in millibars. T=Temperature in degree centigrade. R=Relative humidity (percent).

H	P	T	R
Oct. 14, 7:14 a. m.			
14	998	−1.0	100
46	957	−0.2	100
76	922	−1.1	100
89	908	0.2	93
112	883	−0.3	88
199	791	−5.8	86
286	708	−12.2	99
296	699	−12.5	95
311	686	−13.9	94
392	617	−19.1	72
400	611	−19.0	54
444	577	−21.2	40
450	572	−22.2	39
528	513	−28.6	43
9/10 St, SE, at 410 m (estimated). 6/10 St, SE, 2860–2960 m; 6/10–9/10 St, SE, 2,860–3,315 m.			
Oct. 14, 3:15 p. m.			
14	994	5.0	84
50	950	3.1	87
59	939	3.1	84
88	906	0.6	90
95	898	1.5	60
139	850	0.0	53
153	836	−0.8	50
214	774	−5.8	54
270	721	−10.8	60
322	674	−13.4	48
331	666	−12.9	45
337	660	−12.7	39
343	655	−12.2	37
360	641	−13.1	32
438	579	−19.1	27
450	569	−19.9	27
468	554	−21.6	26
520	517	−24.2	27
2/10 As, SW.			
Oct. 15, 6:21 a. m.			
14	985	4.2	62
26	970	7.0	52
92	916	3.6	64
82	906	3.7	64
85	902	3.9	63
104	882	3.9	58
109	876	4.4	56
112	872	4.3	55
183	800	−1.8	72
269	717	−7.9	100
298	690	−9.5	97
311	680	−9.5	90
375	625	−13.2	89
424	587	−16.0	90
481	544	−20.1	92
518	518	−21.9	64
10/10 St, S, 1,830 to 3,750 m.			
Oct. 15, 3:21 p. m.			
14	978	9.2	55
17	974	10.6	57
26	964	10.7	54
120	859	3.9	69
147	830	3.8	56
246	734	−3.1	75
275	708	−3.7	68
357	637	−9.9	60
408	597	−12.5	58
457	560	−15.8	63
488	538	−18.6	72
530	508	−19.6	83
10/10 As, SW, from 4,570			
Oct. 16, 6:44 a. m.			
14	973	1.0	97
21	963	1.4	100
47	933	0.7	100
59	920	2.7	85
69	908	2.1	84
108	866	1.4	100
162	810	−0.8	100
204	767	−1.7	89
251	723	−5.1	87
254	720	−5.0	83
271	705	−5.4	80
293	685	−6.6	80
300	680	−6.7	82
371	620	−10.6	89
458	553	−16.2	80
520	510	−20.9	81
10/10 St, SE, 210 to 570 m, 8/10 St, unknown, 1,080 to 1,620 m.			
Oct. 17, 3:22 p. m.			
14	1,002	−1.5	92
17	997	−0.1	88
109	889	−7.6	100
175	816	−12.2	100
196	795	−11.5	59
202	788	−10.8	51
217	772	−10.8	42
267	724	−13.3	52
311	685	−15.9	69
360	641	−17.7	94
388	618	−18.6	95
413	599	−19.4	92
490	539	−25.2	94
507	527	−26.2	94
10/10 St, SW, 1,090–1,750 m; 8/10 As, unknown, 3,520–3,680 m; 10/10 As, unknown, from 4,940 m.			
Oct. 18, 6:55 a. m.			
14	1,010	−5.1	97
18	1,003	−2.7	95
31	988	−2.7	93
83	924	−4.9	99
88	918	−5.8	99
147	852	−9.5	99
159	836	−10.7	99
209	786	−13.6	96
225	768	−13.8	95
273	722	−15.0	53
319	680	−17.5	76
347	656	−18.8	41
393	616	−20.9	46
399	611	−21.9	49
425	590	−22.4	65
444	575	−23.7	75
486	543	−26.2	85
505	528	−26.3	84
9/10 St, SW, 1,470 to 1,590 m; heavy haze from 5,050 m; light snow at surface.			
Oct. 18, 3:25 p. m.			
14	1,011	−1.9	97
46	970	−2.9	100
128	872	−9.2	100
165	832	−11.1	95
256	739	−16.7	100
260	736	−16.5	92
306	692	−18.1	79
385	622	−22.2	69
434	581	−25.4	83
505	526	−28.2	91
10/10 St, SE, 1,280–1,550 m; 6/10 As, unknown, from 3,550 m.			
Oct. 19, 7:02 a. m.			
14	1,010	−5.8	95
24	996	−3.4	89
53	960	−3.8	92
128	872	−10.1	88
141	857	−8.4	69
214	781	−12.9	75
236	759	−13.2	76
269	725	−14.0	74
277	719	−13.8	73
336	665	−16.9	69
344	659	−17.8	63
422	594	−22.2	43
428	588	−22.2	40
482	546	−26.2	39
502	531	−26.5	36
531	510	−28.2	33
7/10 St, SE, 1,240 to 1,440 m.			
Oct. 19, 3:19 p. m.			
14	1,008	−2.5	79
50	963	−3.3	77
116	886	−8.0	79
130	870	−8.0	76
176	820	−10.0	67
191	804	−9.3	68
228	766	−10.1	67
284	713	−12.7	46
372	635	−17.1	34
456	569	−20.0	29
529	516	−23.4	26
Few As, unknown.			
Oct. 20, 6:49 a. m.			
14	1,001	−12.8	95
38	970	−3.1	55
54	950	−3.3	52
94	904	−6.0	58
128	864	−0.8	38
140	851	−0.6	33
239	752	−7.7	59
260	732	−7.8	85
265	727	−6.7	62
273	719	−6.2	39
298	698	−7.3	43
304	693	−7.1	46
322	676	−8.1	76
402	610	−12.4	98
430	588	−12.3	93
449	573	−13.9	95
465	562	−14.3	94
541	508	−19.9	98
3/10 Cs, W; 3/10 As, unknown.			
Oct. 20, 3:29 p. m.			
14	994	−3.0	74
39	961	−0.5	64
107	882	−5.5	69
137	850	−0.1	60
199	788	−0.5	67
249	740	−1.6	84
339	660	−6.1	94
410	603	−10.9	100
486	547	−16.5	89
502	535	−16.4	80
535	512	−18.4	74
3/10 As, SW, at 4,500 m (estimated); 3/10 Cs, SW.			
Oct. 21, 8:06 a. m.			
14	998	−2.3	98
15	994	−1.6	98
68	929	−2.0	79
79	917	0.4	75
92	904	0.1	79
124	869	0.4	86
134	858	0.0	92
152	840	0.2	80
188	803	−2.6	100
202	791	−2.6	100
212	780	−2.8	100
222	770	−2.2	97
250	744	−2.8	86
279	718	−4.2	86
286	712	−4.4	81
358	648	−9.8	96
438	586	−15.5	97
481	552	−17.8	93
536	513	−21.6	90
2/10 St, SE, 2,040 to 2,220 m; 8/10 As, SW (smooth, opaque, hard ice ¼ in.), 4,380–4,810 m.			
Oct. 21, 2:34 p. m.			
14	998	0.2	88
39	968	3.3	75
55	948	2.3	71
74	926	5.4	62
120	876	4.6	65
178	816	1.0	77
194	798	0.9	75
256	739	−2.6	79
323	678	−8.4	95
388	624	−12.0	76
421	599	−13.2	81
506	535	−18.6	72
536	513	−20.8	67
6/10 As, SW, from 4,240 m.			
Oct. 23, 7:15 a. m.			
14	994	1.3	97
31	974	2.2	100
103	891	0.7	87
176	814	−3.6	100
183	806	−3.2	82
256	735	−7.0	94
327	671	−11.7	95
342	658	−10.8	68
380	626	−12.5	45
454	568	−17.8	40
470	555	−17.6	36
529	514	−20.7	26
9/10 St, SW, 585–3,270 m; Few Cs, unknown; Light mist at surface.			
Oct. 23, 2:44 p. m.			
14	998	2.4	95
41	966	1.9	100
99	900	1.2	90
146	849	−2.0	100
171	822	−2.0	94
198	795	−2.7	88
252	743	−6.1	86
320	682	−11.3	100
344	660	−10.6	69
359	648	−10.4	47
436	586	−14.9	37
471	560	−15.2	31
536	514	−19.2	26
7/10 St, SW, 372–500 m; 7/10 St. SW, 1,105–1,590 m; 7/10 St, unknown, 2,860–3,315 m.			
Oct. 24, 7:27 a. m.			
14	994	−1.8	100
31	972	3.4	78
42	960	3.4	78
70	926	2.4	84
76	922	3.1	68
82	914	3.3	68
122	869	1.9	71
184	804	−2.5	87
193	795	−2.8	85
275	715	−9.4	100
300	693	−9.7	88
311	684	−7.7	74
374	630	−11.8	100
406	606	−12.3	94
500	534	−19.1	93
541	506	−20.8	70
7/10 St, SW, 2,310 to 2,975 m; 5/10 As, unknown, 3,500–3,960 m; 5/10 Cs, unknown.			
Oct. 24, 2:41 p. m.			
14	993	2.3	93
25	978	5.0	69
86	908	2.8	72
91	901	2.9	71
100	892	3.1	64
158	830	−0.7	81
202	786	−3.7	100
206	783	−4.1	100
224	765	−5.2	100
298	694	−8.1	100
327	670	−9.6	100
345	654	−10.2	100
373	631	−12.5	100
401	610	−12.5	93
463	563	−16.4	86
524	520	−20.3	89
10/10 St, SW, 2,020–2,240 m; 8/10 St, unknown, 2,980–3,280 m; 6/10 As, unknown, 3,450–3,800 m.			
Oct. 25, 6:51 a. m.			
14	990	−1.5	100
33	966	2.6	83
60	935	2.6	77
99	890	0.2	87
108	880	−0.2	92
116	872	−0.7	94
126	860	−0.2	78
172	814	−2.1	90
189	798	−2.4	80
249	740	−7.4	99
291	701	−7.9	85
297	694	−8.2	85
314	680	−8.2	54
352	648	−10.4	35
375	629	−11.2	28
443	576	−14.8	23
526	516	−20.3	23
Moderate ground fog, surface to 500 m; 8/10 St, SW at 990 m (estimated); 5/10 As, unknown, at 3,150 m (estimated).			
Oct. 25, 2:36 p. m.			
14	989	−0.4	96
26	974	−0.3	100
36	962	2.4	85
46	950	2.5	81
50	944	2.8	79
89	901	0.8	95
115	873	0.9	84
118	870	1.5	73
128	859	1.5	70
225	761	−4.8	100
272	717	−5.5	89
335	662	−10.6	100
361	640	−10.6	80
432	584	−15.0	72
462	561	−15.2	37
536	508	−20.1	29
Light ground fog, surface to 290 m; 7/10 St, SW, 2,260–2,560 m; 5/10 As, SW, 3,240–3,390 m.			
Oct. 26, 7:14 a. m.			
14	983	−0.3	99
31	961	7.3	61
45	944	7.3	61
63	923	6.7	62
71	914	8.0	55
84	901	8.0	50
150	831	3.6	60
211	769	−0.8	68
275	710	−5.4	85
349	646	−9.5	81
418	590	−13.9	95
493	535	−18.7	90
553	493	−23.2	95
9/10 St, S, from 1,520 m; moderate turbulence and light rain at 1,520 m (top not determined).			
Oct. 26, 2:55 p. m.			
14	977	5.5	80
26	962	9.6	67
43	943	9.2	66
80	902	6.4	71
90	890	6.4	66
131	848	3.5	69
142	836	3.5	67
190	788	0.2	71
246	735	−3.9	81
319	669	−8.6	97
379	620	−12.0	100
473	548	−17.5	100
534	506	−21.4	100
Entered snow at 1,900 m. 10/10 St, SW, from 2,460 m;			
Oct. 28, 7:26 a. m.			
14	990	−1.5	100
16	987	0.5	99
63	930	0.5	84
117	868	−3.1	98
171	811	−7.6	97
188	796	−7.6	70
264	721	−13.2	97
280	707	−13.6	98
331	662	−15.8	69
422	587	−22.1	65
437	577	−23.6	63
487	536	−27.0	62
530	505	−30.7	70
3/10 St, SW, 370–580 m; 9/10 St, SW, 1,320–1,820 m; 5/10 As, SW, 2,360–2,800 m; 5/10 As, SW, 3,090 to 3,240 m; 7/10 Cs, unknown; light ground fog.			
Oct. 28, 4:35 p. m.			
14	997	−4.0	90
40	964	−5.3	86
80	915	−8.5	100
111	880	−11.5	100
134	855	−13.1	100
183	804	−12.6	52
238	748	−13.0	49
295	696	−16.2	37
314	678	−17.5	47
398	605	−23.9	72
487	535	−30.3	82
504	524	−32.3	85
Moderate turbulence 400–1,830 m; 9/10 St, SW, 710–1,340 m (1/16 in. clear, hard ice); 10/10 As, unknown, (1/16 in. clear, hard ice) from 4,870 m.			

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H=Height in decameters above sea level. P=Pressure in millibars. T=Temperature in degree centigrade. R=Relative humidity (percent).

Oct. 29, 7:00 a. m.

H	P	T	R
14	1,004	−13.8	89
24	990	−8.0	82
37	974	−8.1	82
104	891	−13.0	84
153	838	−15.1	98
162	827	−16.2	94
188	801	−17.0	80
253	734	−20.6	68
264	723	−17.9	54
283	706	−18.2	47
294	694	−18.8	43
319	672	−18.8	36
397	605	−21.3	30
465	550	−24.4	26
516	514	−27.5	24

2/10 St, SW, at 1780 m (estimated).

Oct. 29, 2:14 p. m.

H	P	T	R
14	1,004	−7.7	86
44	965	−9.4	94
86	914	−11.6	84
97	902	−11.7	88
104	892	−12.2	89
122	872	−12.3	77
176	811	−15.1	60
194	795	−12.9	48
228	760	−13.0	43
299	692	−15.8	32
367	632	−18.4	28
468	550	−23.3	25
520	513	−26.2	39

2/10 Cs, NW.

Oct. 30, 7:08 a. m.

H	P	T	R
14	1,006	−9.8	76
18	1,000	−8.8	78
31	984	−7.2	67
48	961	−6.2	58
80	924	−8.2	59
90	912	−4.5	50
114	885	−5.5	55
126	871	−5.4	67
148	847	−7.1	79
156	838	−7.1	85
161	831	−6.7	88
229	762	−8.4	95
290	704	−11.0	100
360	642	−14.5	98
454	566	−20.8	84
524	515	−26.4	95

10/10 St, W, 1,310 to 2,900 m; 3/10 As, unknown, from 5,135 m.

Oct. 30, 2:10 p. m.

H	P	T	R
14	1,007	−4.7	61
25	992	−5.0	60
38	976	−4.3	59
47	964	−4.3	60
70	937	−5.6	62
79	926	−3.8	71
89	914	−3.3	81
96	907	−3.3	89
127	871	−3.3	100
150	847	−3.8	100
153	843	−3.2	100
187	808	−3.3	87
241	754	−6.6	89
280	718	−8.8	90
334	670	−13.6	97
347	659	−13.7	95
414	602	−18.2	96
425	594	−18.4	95
462	565	−21.2	92
495	540	−21.2	59
532	514	−24.1	48

9/10 St, SW, 960–1,825 m; 7/10 As, W, 4,140–4,250 m.

Oct. 31, 7:09 a. m.

H	P	T	R
14	1,007	−6.0	91
19	1,000	−5.0	95
32	981	−4.0	85
40	971	−3.5	83
47	961	−2.2	71
59	946	−2.6	64
80	923	1.2	60
92	910	2.1	58
161	834	−1.9	67
172	823	−1.9	73
225	770	−6.0	91
277	722	−9.2	91
284	714	−9.5	90
344	660	−13.8	95
396	617	−17.2	77
412	604	−17.3	54
475	554	−21.2	44
536	510	−25.9	58

7/10 St, W, 2,520–2,980 m; 7/10 As, W, from 3,240 m; light ground fog.

Oct. 31, 2:09 p. m.

H	P	T	R
14	1,006	−2.0	89
21	995	−1.7	86
29	986	−0.9	82
36	976	−0.7	81
47	962	0.0	77
52	956	0.0	71
58	949	−0.4	69
66	941	−0.3	65
78	926	−0.6	64
96	906	1.9	62
160	837	−1.9	83
228	769	−6.0	95
278	728	−7.4	90
329	676	−11.3	100
363	647	−13.1	99
370	641	−13.1	99
451	576	−19.0	92
459	570	−19.0	90
498	540	−22.4	90
516	527	−22.3	72
524	521	−22.3	62
539	511	−23.1	59

10/10 St, W, 2,700 to 3,630 m; hard, opaque ice, 1/8 in., at 3,290 m; 3/10 Cs, unknown.

Nov. 1, 7:07 a. m.

H	P	T	R
14	1,000	−4.7	97
20	989	1.2	86
31	976	2.4	78
37	968	3.3	75
47	960	3.8	71
64	940	3.9	64
69	935	3.6	64
94	906	3.0	64
102	897	3.2	61
112	886	3.1	62
116	880	3.0	63
126	869	3.7	60
148	848	2.8	61
191	802	−0.6	73
263	732	−3.9	93
295	701	−4.0	53
384	627	−9.7	83
406	610	−9.7	83
473	560	−12.3	97
505	538	−12.8	91
545	510	−15.7	97

Light ground fog; 9/10 As, W, from 2,826 m.

Nov. 1, 2:41 p. m.

H	P	T	R
14	995	1.2	80
18	989	2.1	80
26	979	3.3	75
33	971	4.4	67
43	957	4.9	63
98	895	1.8	72
112	879	4.8	62
125	866	4.3	58
178	813	1.2	62
252	741	−3.3	80
261	733	−3.2	83
286	710	−4.5	91
291	705	−3.8	88
312	686	−3.8	88
332	669	−4.7	92
348	655	−4.8	91
371	636	−6.1	94
396	615	−6.4	75
476	554	−11.6	84
499	538	−11.5	87
543	508	−14.0	94

9/10 As, W, from 3,035 m.

Nov. 2, 7:16 a. m.

H	P	T	R
14	990	1.1	93
37	961	2.3	95
42	955	2.7	93
48	946	2.4	92
65	927	3.3	90
96	892	2.2	90
108	878	2.3	84
139	847	0.6	100
153	831	1.5	100
166	818	1.5	95
188	796	0.0	96
204	780	−0.2	92
225	759	−1.8	92
243	742	−2.1	89
298	692	−5.1	96
327	667	−6.9	100
339	656	−6.9	98
346	651	−6.8	97
398	609	−7.6	96
423	591	−9.3	100
452	568	−11.1	100
474	552	−11.1	100
517	522	−14.5	97
541	506	−15.2	97

Light ground fog; 3/10 St, SE, at 1,650 m (estimated); 9/10 As, SW (clear, hard ice less than 1/16 in.) 4,230 to 4,520 m; 10/10 Cs, unknown.

Nov. 2, 4:05 p. m.

H	P	T	R
14	991	0.1	91
24	978	0.4	95
50	947	−0.5	93
78	915	−0.1	100
114	874	−1.2	100
134	854	−1.2	100
137	849	−0.2	100
142	844	−0.3	100
180	804	−0.7	96
237	749	−4.8	100

10/10 St, SE, from 1,140 m.; 1/4 in. hard ice and rime from 1,420 m.

Nov. 3, 9:55 a. m.

H	P	T	R
14	1,000	−4.6	86
37	969	−5.6	91
48	955	−5.8	91
72	925	−3.4	100
88	907	−3.2	100
114	879	−4.3	100
133	857	−5.5	100
147	842	−5.5	100
162	826	−6.3	100
191	796	−5.9	100
202	786	−5.1	100
216	772	−5.1	100
273	717	−7.1	100
320	675	−9.2	100
371	632	−12.2	96
414	599	−13.4	95
480	548	−18.8	90
536	508	−23.7	91

9/10 St, SE, 580 to 1,265 m; light snow, surface to 1,140 m; 3/10 Cs, unknown.

Nov. 3, 2:18 p. m.

H	P	T	R
14	1,002	−4.1	68
46	962	−4.6	68
59	947	−4.6	73
83	919	−3.7	83
118	878	−5.5	100
128	868	−5.1	95
158	835	−6.7	100
173	817	−6.4	100
193	798	−5.0	97
204	786	−5.1	90
270	722	−8.1	100
285	709	−8.2	100
301	695	−8.8	100
314	682	−8.8	95
334	665	−10.3	99
349	652	−10.4	95
410	603	−14.3	81
477	552	−20.0	92
531	513	−24.2	94

9/10 St, S, 1,200–1,735 m 7/10 St, unknown, 2,055–3,285 m 8/10 As, unknown, 3,340–5,215 m 3/10 Cs, unknown.

Nov. 4, 7:28 a. m.

H	P	T	R
14	1,009	−7.5	87
16	1,003	−4.6	77
22	996	−4.6	72
41	974	−1.9	62
112	890	−5.7	85
135	865	−2.4	88
191	806	−4.1	80
250	747	−7.4	89
269	730	−7.8	89
280	720	−8.5	81
294	707	−8.2	54
299	703	−8.5	50
304	698	−8.3	45
309	693	−8.4	42
330	632	−12.5	30
459	570	−18.4	54
514	529	−22.5	75
529	517	−23.0	75

2/10 St, S, at 1,325 m (estimated) 5/10 As, S, 3,185–4,880 m.

Nov. 4, 2:11 p. m.

H	P	T	R
14	1,009	−4.0	60
22	998	−2.3	61
36	982	−1.3	61
92	915	−5.0	73
100	907	−5.0	77
107	898	−4.6	80
117	885	−4.6	87
128	871	−3.0	90
142	857	−3.3	95
147	852	−2.2	92
157	841	−2.3	84
206	792	−5.5	99
218	779	−5.5	65
244	753	−5.6	45
296	705	−8.7	36
338	668	−10.8	31
404	613	−14.9	44
465	566	−19.2	56
530	517	−23.7	65

1/10 St, S, at 1,905 m (estimated) 1/10 Cs, SW.

Nov. 5, 7:48 a. m.

H	P	T	R
14	1,002	−14.3	98
35	972	−2.3	67
70	930	−4.0	68
78	922	−4.0	69
95	902	−0.4	57
108	889	−0.5	56
118	876	−1.3	59
135	860	−1.3	57
180	813	−5.0	67
192	800	−5.1	66
210	783	−5.5	65
219	773	−4.7	40
269	725	−6.9	32
282	713	−6.9	33
351	652	−10.2	42
377	630	−10.9	39
434	586	−14.5	59
464	564	−16.7	68
538	511	−18.7	64

Few As, unknown light ground fog.

Nov. 5, 2:18 p. m.

H	P	T	R
14	1,001	−6.0	97
20	993	−2.7	70
42	966	−0.9	60
81	920	−3.0	64
97	901	0.0	61
108	890	0.0	61
123	874	−0.4	62
167	826	−3.7	75
196	798	−3.6	71
249	746	−5.1	46
295	703	−9.1	88
342	662	−10.0	93
365	642	−10.0	95
432	590	−12.4	96
488	548	−16.0	95
539	512	−19.7	98

Light ground fog 7/10 As, SW, 2,835–4,035 m 5/10 As, SW, from 4,635 m.

Nov. 6, 7:48 a. m.

H	P	T	R
14	999	−6.5	100
16	996	−3.2	90
31	978	−3.2	78
44	961	−3.7	74
50	954	−3.4	73
55	948	−3.5	83
73	927	−0.4	71
94	905	−0.3	82
109	887	−0.9	96
127	868	−1.0	88
176	816	−4.2	93
185	807	−4.2	94
206	786	−5.5	97
236	756	−5.8	93
263	730	−7.8	96
286	710	−7.8	86
393	642	−12.6	98
416	599	−16.5	92
446	574	−17.0	57
496	538	−20.9	46
528	514	−24.2	42

2/10 St, SW (thin layer at 575 m, estimated); 8/10 As, SW, 2,415–3,775 m.

Nov. 6, 2:08 p. m.

H	P	T	R
14	998	−2.9	76
36	969	−1.8	75
53	948	−2.8	75
57	942	−2.5	74
68	929	−2.5	74
76	919	−2.8	75
89	904	−0.6	80
106	886	−0.7	75
161	825	−2.8	88
171	815	−2.8	88
237	752	−6.9	96
323	672	−11.5	94
402	607	−16.5	100
415	597	−16.7	100
442	577	−18.5	82
452	568	−18.5	62
486	542	−21.6	57
534	508	−26.3	52

2/10 St, SW, 2,065 to 2,950 m 2/10 As, SW, 3,280–3,840 m.

Nov. 7, 7:36 a. m.

H	P	T	R
14	990	−14.5	100
20	980	−7.3	98
40	956	−5.5	85
70	919	−5.3	96
89	898	−2.7	88
104	881	−2.3	87
128	854	−3.5	90
149	831	−2.8	80
191	789	−3.7	77
261	722	−9.3	93
282	702	−9.3	72
349	644	−14.0	82
406	597	−18.4	72
467	548	−23.1	70
526	506	−28.9	69

1/10 St, SE, at 575 m (estimated). 2/10 As, E.

Nov. 7, 2:10 p. m.

H	P	T	R
14	989	−8.2	97
33	965	−3.7	73
54	939	−3.7	73
76	913	−4.2	82
80	908	−2.6	85
96	890	−2.3	82
108	875	−0.9	76
116	865	−0.9	70
180	799	−5.0	64
242	738	−8.9	68
255	726	−8.7	56
277	706	−8.7	51
334	655	−12.9	38
390	610	−16.9	32
447	564	−22.0	33
495	528	−25.3	35
526	506	−25.1	36

7/10 As, SW.

Nov. 8, 8:06 a. m.

H	P	T	R
14	980	−3.2	94
19	973	0.1	76
26	965	0.9	66
35	956	0.2	64
39	949	0.2	62
47	940	0.6	62
55	931	0.1	62
74	910	0.1	68
98	883	−1.0	78
178	798	−3.6	100
251	728	−6.4	90
312	674	−9.7	88
365	628	−14.0	94
422	582	−17.5	92
432	576	−18.2	92

Light snow, light fog moderate snow, 980–1,780 m 10/10 St, NE (hard ice 1/4 in. opaque) from 3,120 m.

Nov. 9, 3:32 p. m.

H	P	T	R
14	987	−10.0	96
27	970	−6.7	95
98	885	−10.4	100
150	827	−10.3	99
163	814	−10.0	97
184	792	−10.1	96
215	760	−11.2	99
253	723	−12.1	97
270	707	−13.1	96
341	645	−17.8	100
396	600	−21.8	96
469	542	−27.7	96
515	508	−30.9	94

Light snow, light ground fog 9/10 St, NW, (1/8 in. opaque hard ice) 2,700–3,410 m 10/10 Cs, unknown.

Nov. 10, 7:44 a. m.

H	P	T	R
14	985	−10.4	73
38	955	−9.1	77
71	914	−8.3	100
114	866	−9.5	100
129	849	−8.3	99
182	792	−8.9	100
246	730	−12.3	82
325	658	−17.1	82
406	590	−24.2	92
472	540	−26.8	56
525	501	−31.6	81

10/10 St, E, (1/8 in. rough, opaque, hard ice) 710–1,290 m; 7/10 St, unknown, 2,470–3,380 m; 7/10 As, unknown, 3,635–4,075 m.

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H = Height in decameters above sea level. T = Temperature in degree centigrade.
P = Pressure in millibars. R = Relative humidity (percent).

H	P	T	R
Nov. 10, 2:16 p. m.			
14	983	−13.0	70
65	919	−9.6	76
88	891	−9.0	83
103	862	−9.5	94
130	844	−8.2	93
155	806	−8.2	93
212	760	−10.5	100
265	709	−14.0	100
289	688	−14.2	80
344	639	−18.9	82
407	588	−23.2	95
427	572	−23.4	68
466	542	−26.7	57
498	518	−29.9	54
520	503	−31.4	49
2/10 St, SE, 1,000–1,300 m; 3/10 St, SE, 2,025–2,285 m; 3/10 St, SE, 2,455–2,755 m; few Cs, unknown.			
Nov. 11, 8:04 a. m.			
14	975	−14.3	93
21	965	−10.7	87
30	954	−10.8	84
74	901	−12.5	90
100	871	−10.3	90
115	854	−10.3	93
124	844	−9.4	97
131	836	−10.0	98
137	828	−8.6	95
148	818	−9.2	90
161	803	−9.5	93
177	787	−9.8	89
182	782	−8.3	84
212	753	−8.3	82
270	699	−12.2	90
342	636	−17.0	100
404	586	−22.1	99
464	540	−26.0	85
514	503	−30.3	68
8/10 St, SW, 2,290 to 3,585 m; 8/10 As, unknown (1/8 in. opaque, rough ice), 3,725–4,040 m.			
Nov. 11, 1:59 p. m.			
14	974	−10.4	77
74	900	−14.5	82
87	886	−13.7	84
109	860	−14.7	89
149	817	−12.6	93
159	806	−12.7	93
168	796	−10.7	93
184	780	−10.6	88
203	760	−11.5	85
211	752	−10.7	80
254	715	−12.3	68
329	645	−17.7	87
403	584	−23.3	98
419	572	−23.4	77
482	524	−29.2	65
516	499	−32.4	61
4/10 As, SW, 2,735 to 4,035 m.			
Nov. 12, 8:10 a. m.			
14	983	−18.2	90
35	955	−15.6	91
47	939	−15.5	86
94	881	−18.0	88
149	819	−18.2	96
165	801	−18.3	98
184	781	−18.1	99
188	775	−17.3	99
194	769	−16.5	99
236	728	−17.3	99
240	723	−16.7	98
262	703	−17.3	89
268	697	−17.1	78
283	684	−17.2	68
346	628	−20.0	50
401	584	−23.2	45
461	538	−27.7	47
510	501	−31.6	46
10/10 St, NE, 1,650–1,880 m; 7/10 St, unknown, 2,135–3,040 m.			
Nov. 12, 1:56 p. m.			
14	986	−16.0	85
36	955	−15.8	84
50	939	−15.8	84
94	886	−19.2	87
118	858	−19.7	87
146	826	−21.3	95
172	797	−21.1	98
184	785	−20.1	98
201	767	−20.1	99
219	748	−20.4	100
227	740	−20.2	100
252	715	−20.4	96
263	707	−19.8	77
284	687	−19.9	67
302	618	−22.2	53
414	576	−25.4	47
443	554	−27.6	46
480	525	−30.6	44
510	504	−32.9	44
Snow flurries at surface; 10/10 St, NE (1/8 in. opaque, hard ice) 1,460–2,190 m.			
Nov. 14, 7:47 a. m.			
14	1,002	−19.1	70
32	977	−16.9	68
44	961	−17.1	70
59	941	−18.2	71
92	901	−18.2	72
126	862	−19.1	75
146	840	−17.7	77
159	826	−13.5	78
247	736	−18.0	90
275	709	−18.6	86
289	696	−19.5	78
312	675	−19.5	61
375	620	−21.3	46
441	568	−25.1	39
497	524	−28.5	37
512	513	−28.5	35
5/10 St, SE, 2,140 to 2,715 m; 3/10 Cs, unknown.			
Nov. 14, 1:36 p. m.			
14	995	−22.0	86
24	982	−17.6	83
35	967	−17.6	79
80	910	−19.7	79
107	878	−18.5	80
135	848	−13.5	81
159	820	−13.3	83
169	809	−14.0	88
174	804	−13.8	89
204	774	−12.7	95
232	746	−12.9	86
280	701	−16.6	65
329	657	−18.3	51
360	630	−20.1	45
382	612	−20.1	42
445	562	−22.4	37
464	548	−21.6	39
510	514	−24.8	46
Light ground fog; 10/10 Cs, SW.			
Nov. 15, 8:16 a. m.			
14	977	−17.3	89
85	888	−17.8	93
98	871	−16.6	95
117	850	−17.1	96
138	827	−17.5	97
152	813	−9.3	99
160	806	−5.0	100
180	786	−4.8	83
189	776	−4.1	74
203	763	−4.1	68
282	690	−8.1	68
348	634	−12.5	76
420	578	−17.1	74
473	538	−21.8	79
511	511	−24.7	78
Snow flurries at surface; 10/10 St, SE, (1/4 in. rime), 1,170–1,520 m; 10/10 Cs, unknown.			
Nov. 15, 2:16 p. m.			
14	983	−18.5	94
55	930	−17.6	98
118	855	−19.4	98
124	848	−19.3	99
138	832	−14.8	100
167	803	−9.8	100
204	765	−11.6	97
222	748	−11.7	91
270	703	−14.0	100
285	689	−15.5	100
307	669	−15.2	99
326	652	−15.2	98
344	637	−17.4	96
395	596	−18.4	94
436	564	−21.5	96
456	548	−21.5	91
500	516	−25.3	88
10/10 St, SE, (1/16 in opaque, hard ice) 1,180–1,380 m; 10/10 Ac, unknown, (1/16 in. opaque, smooth, hard ice) 2,700–3,070 m.			
Nov. 16, 8:20 a.m.			
14	997	−29.8	50
19	988	−19.9	51
36	967	−19.3	54
112	873	−19 2	68
153	829	−12.8	77
182	798	−12.7	78
211	769	−13.7	66
224	755	−13.5	72
257	724	−15.9	79
264	717	−15.2	74
316	671	−15.8	63
391	607	−21.6	66
406	596	−21.8	66
455	556	−26.3	69
495	526	−26.6	54
517	510	−28.3	52
Light ground fog; 2/10 St, SE, at 2,450 m. (estimated).			
Nov. 16, 1:41 p. m.			
14	997	−28.8	50
28	977	−20.1	51
69	923	−20.3	60
114	870	−20.0	65
149	830	−14.6	54
163	816	−13.3	61
178	799	−13.3	61
196	782	−14.6	58
210	767	−14.6	60
239	739	−16.5	67
265	714	−17.0	71
271	708	−16.5	62
285	696	−16.6	63
351	638	−18.9	60
375	617	−19.1	49
450	558	−24.5	44
512	512	−28.4	40
2/10 As, SW.			
Nov. 17, 8:42 a. m.			
14	991	−26.9	62
39	956	−26.5	66
71	915	−23.4	71
127	850	−23.7	71
152	822	−20.7	72
189	782	−16.8	78
212	758	−16.8	89
237	734	−10.3	91
263	710	−10.3	100
298	679	−11.2	97
365	622	−15.8	100
432	568	−18.6	92
459	548	−19.6	86
515	509	−23.9	86
9/10 St, SE, 2,290–3,010 m; 7/10 As, unknown, 3,530–4,020 m; 3/10 Cs, unknown.			
Nov. 18, 8:39 a. m.			
14	980	−23.7	78
28	960	−20.3	80
38	946	−21.5	80
50	930	−20.1	79
62	915	−19.9	79
103	866	−22.1	81
126	838	−22.0	84
160	800	−20.1	87
191	768	−6.6	96
197	763	−6.5	97
208	754	−5.6	95
230	732	−5.5	90
298	671	−9.9	86
347	629	−12.3	82
367	613	−13.0	40
424	570	−17.5	40
479	529	−21.8	45
514	505	−25.8	53
8/10 St, E, 1,860–3,295 m; 7/10 Cs, unknown.			
Nov. 18, 1:55 p. m.			
14	979	−23.0	56
31	955	−21.1	58
38	946	−20.3	58
77	898	−21.6	60
108	860	−22.4	62
134	830	−22.4	68
160	803	−7.6	72
171	792	−7.5	72
214	750	−10.0	88
237	728	−10.3	86
304	668	−14.8	83
367	614	−18.8	87
419	572	−22.7	92
426	566	−22.5	71
453	546	−23.6	62
483	524	−26.4	53
518	499	−28.3	46
Light snow until 2:30 p. m. at surface; 9/10 St, NE, 1,285–1,575 m; 7/10 Cs, unknown.			
Nov. 19, 8:50 a. m.			
14	995	−23.7	80
67	925	−22.5	86
78	912	−22.2	87
126	854	−23.3	89
172	804	−17.1	90
224	752	−16.7	87
290	689	−20.5	89
372	616	−26.9	94
428	570	−26.4	79
476	534	−29.9	76
510	509	−32.6	72
Snow flurries at surface; 9/10 St, SW, 2,115–3,675 m.			
Nov. 19, 1:42 p. m.			
14	996	−24.3	80
16	922	−20.1	80
26	979	−20.1	80
78	913	−23.5	84
90	899	−22.2	83
118	865	−22.4	82
150	831	−15.2	83
163	817	−14.9	85
173	807	−15.1	85
227	751	−18.4	86
274	706	−21.1	86
282	699	−18.1	68
328	657	−20.1	57
375	616	−22.5	45
416	584	−22.6	40
481	534	−25.6	38
517	509	−28.8	54
Light ground fog; few Cs, unknown.			
Nov. 20, 8:03 a. m.			
14	988	−21.5	62
37	957	−18.6	68
71	916	−7.0	78
83	905	−6.8	80
92	894	−3.5	74
102	882	−3.6	73
110	873	−3.9	74
117	866	−3.8	75
124	858	−3.3	71
143	838	−3.6	70
236	744	−10.8	90
320	668	−15.8	76
392	607	−20.9	60
481	536	−28.9	59
523	506	−33.6	60
4/10 As, S, 3,055–5,230 m.			
Nov. 20, 1:39 p. m.			
14	988	−21.2	89
22	978	−18.9	89
24	973	−14.6	86
33	963	−14.1	87
50	942	−3.9	80
74	915	−3.2	81
90	898	−1.5	70
98	889	−0.9	63
110	877	−0.9	62
169	815	−4.2	55
220	763	−7.9	60
280	708	−11.1	60
354	642	−16.2	61
430	580	−22.7	65
492	532	−28.2	72
530	504	−31.1	68
8/10 As, SW, from 4,140 m.			
Nov. 21, 8:25 am.			
14	974	−7.0	92
23	961	2.2	62
62	914	1.6	62
94	880	1.1	56
149	822	−2.4	61
187	784	−3.7	52
262	712	−9.7	64
354	631	−16.5	79
430	570	−22.1	83
493	524	−27.4	80
538	491	−32.1	77
9/10 As, SW, from 2,500 m.			
Nov. 21, 1:12 p. m.			
14	978	−12.0	91
26	961	1.2	63
37	948	2.4	61
47	937	2.5	62
98	879	−0.8	67
104	873	0.1	62
117	858	−0.1	58
188	787	−5.2	61
259	717	−10.9	74
282	697	−11.6	65
334	651	−15.6	64
382	611	−18.8	66
391	604	−19.0	66
463	548	−23.8	50
531	498	−29.9	40
2/10 As, SW.			
Nov. 22, 8:32 a. m.			
14	966	2.8	62
19	958	5.1	59
23	954	5.1	58
59	913	2.8	64
78	893	4.6	55
87	883	4.5	55
154	813	0.4	54
226	742	−5.0	60
297	678	−9.7	57
372	615	−14.6	50
463	546	−21.4	42
536	493	−29.2	42
8/10 As, SW; moderate turbulence throughout flight.			
Nov. 22, 1:25 p. m.			
14	969	4.0	71
24	958	6.3	64
32	949	6.1	64
41	937	5.5	64
50	927	5.6	62
57	920	6.0	56
69	907	6.2	52
88	886	5.5	48
149	822	0.6	50
206	765	−3.9	58
254	722	−7.4	70
335	651	−14.0	92
364	627	−15.3	82
451	558	−20.3	68
509	516	−27.1	62
563	478	−31.7	64
4/10 As, SW, 2,880 to 4,420 m; 8/10 As, SW, at 5,630 m; moderate turbulence throughout flight.			
Nov. 23, 8:27 a. m.			
14	1,004	−2.5	93
30	985	0.4	70
40	973	0.7	58
88	917	−2.3	67
141	858	−6.0	97
155	844	−6.5	87
204	792	−9.7	79
270	726	−14.8	91
332	669	−19.6	95
349	654	−19.8	88
420	595	−24.4	70
426	588	−23.0	52
473	552	−24.9	48
52o	514	−28.7	43
8/10 St, SW, 580 to 1,760 m; 6/10 St, SW, 1,900–3,960 m; few Cs, unknown.			
Nov. 23, 1:22 p. m.			
14	1,005	−6.8	100
20	995	−1.2	87
43	967	−0.7	63
61	945	−1.4	69
94	907	−3.1	72
104	896	−3.0	62
125	873	−5.0	60
136	860	−5.3	59
185	808	−8.8	72
195	797	−8.9	68
217	776	−10.3	58
230	763	−10.3	42
310	687	−16.5	35
387	620	−20.9	30
416	596	−19.4	28
450	561	−19.7	26
526	513	−24.6	32
Light ground fog; 10/10 As, SW from 5,260 m.			
Nov. 24, 8:19 a. m.			
14	993	−1.0	84
26	977	5.7	64
39	961	5.5	64
55	942	5.4	64
59	937	5.6	61
73	922	5.6	56
91	903	4.8	53
155	834	0.0	63
210	778	−4.2	75
281	712	−9.1	86
343	657	−12.8	94
384	623	−12.8	91
432	586	−15.3	95
458	566	−15.7	94
466	560	−15.7	94
481	550	−17.4	96
497	538	−17.4	96
508	529	−18.3	96
517	523	−17.9	94
10/10 St, SW, from 2,100 m; strong turbulence from 4,580 m.			

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H = Height in decameters above sea level. P = Pressure in millibars. T = Temperature in degree centigrade. R = Relative humidity (percent).

H	P	T	R
Nov. 24, 1:06 p. m.			
14	995	2.3	86
20	986	6.6	70
26	980	6.6	67
42	960	5.0	68
47	955	5.9	65
52	948	5.9	62
91	905	2.8	70
145	846	−1.8	96
213	776	−6.0	100
264	727	−9.1	100
286	708	−9.1	100
310	686	−10.6	100
10/10 St, SW, and strong turbulence from 910 m; sprinkling at surface until 1:10 p. m., light rain 1:20 to 5:40 p. m.			
Nov. 25, 8:33 a. m.			
14	980	−0.4	100
25	967	7.0	68
35	955	13.5	44
53	935	14.1	35
76	910	14.2	32
150	832	8.3	34
240	747	2.2	41
267	721	0.0	44
295	697	−2.5	50
Light ground fog; moderate turbulence surface to 2,670 m; severe turbulence from 2,670 m; 9/10 As, S.			
Nov. 25, 1:04 p. m.			
14	977	7.0	84
21	969	15.3	42
34	954	14.8	42
87	895	9.7	44
112	869	9.7	45
202	778	5.1	45
268	718	1.2	40
339	657	−5.1	48
408	602	−10.2	57
467	558	−14.7	63
492	540	−14.1	57
527	516	−15.9	75
533	512	−15.2	62
Moderate turbulence throughout flight; 9/10 As, S.			
Nov. 26, 9:16 a. m.			
14	1,004	−0.1	68
17	1,000	1.2	64
86	917	−4.1	74
147	848	−6.7	76
172	820	−8.6	90
190	803	−9.4	95
202	790	−9.7	93
252	740	−13.5	92
308	688	−17.5	92
337	662	−17.5	80
384	622	−21.2	81
400	608	−21.3	68
440	576	−25.2	64
456	564	−25.3	53
325	511	−31.8	50
9/10 St, W, (1/16 inch hard, rough, opaque ice) 1,720–3,080 m.			
Nov. 26, 1:20 p. m.			
14	1,008	−4.7	79
16	1,002	−0.9	74
20	997	−0.9	74
78	927	−4.5	78
94	908	−4.5	71
106	895	−3.9	68
115	884	−4.2	67
173	821	−8.5	68
230	764	−12.5	67
280	714	−15.5	79
294	701	−15.8	58
343	656	−18.2	54
402	607	−22.2	48
421	593	−22.5	47
463	558	−26.3	46
481	544	−26.4	43
517	517	−28.5	44
Few As, W, at 2,800 m (estimated).			
Nov. 27, 8:52 a. m.			
14	1,007	−16.9	100
32	983	−4.7	81
44	968	−2.8	70
63	948	−1.9	63
80	926	−2.1	56
142	856	−5.2	48
188	838	−5.4	45
219	776	−9.3	50
230	764	−9.4	48
293	704	−13.9	54
305	694	−14.0	55
338	664	−16.2	60
352	651	−15.4	39
368	637	−15.8	35
417	598	−18.1	34
459	564	−19.3	30
520	520	−23.7	27
Light ground fog; Few St, unknown.			
Nov. 27, 1:17 p. m.			
14	1,004	−14.0	100
22	993	−5.6	78
33	979	−3.5	64
63	943	−2.4	50
77	926	−2.4	40
128	870	−3.8	30
184	811	−7.3	36
244	751	−10.7	39
305	693	−14.0	45
311	688	−13.5	41
337	666	−13.7	34
383	626	−16.0	30
404	609	−15.8	28
470	558	−20.3	25
519	522	−24.0	23
Light ground fog.			
Nov. 28, 8:40 a. m.			
14	999	−21.8	93
23	987	−7.1	76
33	976	−5.8	65
75	924	−4.9	55
82	916	−4.2	54
126	866	−5.2	60
168	820	−7.8	89
179	809	−7.2	56
212	775	−7.2	39
248	741	−7.7	29
320	675	−9.6	26
390	616	−14.6	26
395	612	−14.6	26
465	558	−19.4	29
522	518	−23.7	33
Light ground fog, 1/10 Cs, unknown.			
Nov. 28, 1:09 p. m.			
14	998	−15.8	91
19	990	−6.1	71
45	959	−4.3	62
59	942	−4.3	57
64	936	−3.9	56
131	880	−5.9	70
172	815	−7.3	81
188	801	−7.3	71
198	791	−7.1	63
218	771	−7.2	54
238	751	−8.0	76
251	738	−8.0	79
286	707	−8.1	48
354	647	−11.5	37
424	590	−16.3	36
488	542	−20.2	38
522	518	−23.6	36
Light ground fog; 2/10 St, SW, 2,140–2,650; 1/10 Cs, W.			
Nov. 29, 9:06 a. m.			
14	999	−13.4	97
18	994	−5.3	82
27	984	−5.3	79
33	977	−4.7	77
39	969	−4.7	75
46	959	−4.2	74
83	917	−3.0	77
116	880	−3.3	84
122	873	−3.0	82
138	857	−3.4	85
201	791	−6.0	94
261	732	−9.3	100
299	707	−10.3	96
300	697	−10.7	82
312	686	−11.8	82
382	626	−15.2	73
469	556	−21.0	59
477	550	−21.0	55
522	518	−25.0	49
Light ground fog; 2/10 St, SW, 2,460–2,900 m; 1/10 Cs, unknown.			
Nov. 29, 1:18 p. m.			
14	996	−13.5	96
16	991	−5.9	83
41	961	−5.3	75
76	921	−3.3	74
121	869	−3.3	77
139	851	−4.3	80
159	829	−4.5	80
242	745	−9.8	76
254	734	−10.1	73
308	685	−12.8	68
328	669	−13.6	61
337	658	−13.8	47
355	643	−14.5	46
427	586	−20.3	36
465	556	−22.0	35
520	516	−26.4	30
2/10 Cs, SW.			
Nov. 30, 8:52 a. m.			
14	994	−13.9	96
38	962	−12.6	97
52	944	−9.3	100
76	914	−9.2	100
114	871	−6.8	100
126	860	−6.4	99
171	810	−6.7	100
248	736	−10.9	98
313	676	−14.7	97
331	660	−15.4	98
374	623	−17.3	95
436	574	−22.0	93
477	542	−24.6	92
508	520	−27.3	92
Frost ¼ in. surface to 3,310 m; 9/10 St, unknown, 425–3,310 m; 5/10 Cs, unknown.			
Nov. 30, 1:47 p. m.			
14	995	−13.9	94
37	965	−12.5	96
63	933	−9.2	100
86	906	−10.1	100
113	875	−9.6	100
128	858	−8.7	99
153	832	−8.5	96
172	812	−8.5	100
189	794	−8.5	100
258	725	−12.7	100
Light snow at surface; 10/10 St, S (rime ¼ in.) from 1,720 m.			
Dec. 1, 9:58 a. m.			
14	1,008	−20.8	97
22	996	−17.5	99
46	966	−13.5	90
76	929	−13.0	78
104	896	−10.9	67
143	852	−11.4	58
198	794	−11.4	40
279	714	−14.0	38
348	652	−17.4	38
426	588	−19.0	30
510	526	−23.0	25
Moderate ground fog, surface to 220 m; 3/10 St, E.			
Dec. 1, 1:06 p. m.			
14	1,007	−24.0	46
21	995	−15.5	50
56	952	−13.9	56
89	913	−12.8	62
116	881	−11.0	56
176	815	−11.2	45
249	742	−13.5	44
328	670	−16.3	41
412	599	−18.6	34
467	554	−21.9	32
510	523	−25.4	32
Cloudless.			
Dec. 2, 9:02 a. m.			
14	1,014	−32.0	35
31	991	−14.7	40
41	979	−13.6	40
52	964	−13.5	40
61	951	−12.7	40
78	931	−12.8	40
86	922	−12.1	40
92	914	−12.1	40
98	908	−11.0	40
118	885	−11.5	38
128	873	−12.2	37
206	789	−12.7	30
219	776	−13.2	29
280	716	−13.7	27
347	655	−17.0	27
413	601	−21.3	27
473	552	−24.8	27
522	517	−28.1	27
Light ground fog.			
Dec. 2, 1:23 p. m.			
14	1,015	−30.5	41
39	979	−12.9	42
50	966	−12.9	41
57	955	−12.3	41
102	901	−12.7	42
116	885	−11.5	39
133	866	−11.6	37
150	848	−12.2	35
194	799	−11.7	32
217	775	−12.6	30
237	756	−12.3	30
267	727	−13.6	30
280	715	−13.7	30
334	666	−16.4	29
393	616	−19.8	30
457	564	−24.1	30
512	523	−27.7	30
Light ground fog.			
Dec. 3, 8:49 a. m.			
14	1,013	−30.8	35
21	1,001	−15.3	36
57	956	−11.7	35
86	921	−11.6	34
100	904	−12.3	35
135	865	−12.0	33
140	858	−11.0	33
175	821	−11.6	30
181	816	−10.9	30
214	782	−10.9	30
230	766	−12.2	30
247	749	−13.1	31
325	676	−16.8	31
398	613	−20.2	31
474	552	−25.2	32
528	513	−28.0	32
Cloudless.			
Dec. 3, 1:08 p. m.			
14	1,012	−27.8	49
24	997	−14.1	48
45	969	−12.3	45
72	935	−11.8	43
110	893	−13.4	43
131	868	−13.4	43
137	862	−12.8	42
158	839	−13.1	41
163	833	−12.3	38
220	773	−12.4	33
228	765	−11.6	32
234	760	−11.6	32
293	704	−14.8	32
355	648	−18.0	32
424	593	−21.9	33
475	552	−25.2	33
516	521	−28.0	32
522	517	−28.0	32
Cloudless.			
Dec. 4, 8:38 a. m.			
14	1,001	−32.5	34
37	969	−11.4	32
105	887	−15.2	30
123	867	−15.2	30
145	844	−7.6	28
160	828	−7.8	26
191	796	−10.1	24
196	791	−10.1	24
202	786	−8.9	24
210	778	−8.8	23
224	763	−9.1	22
252	736	−10.5	21
266	722	−10.5	20
319	675	−14.2	20
370	631	−17.8	20
394	612	−17.8	19
453	564	−22.5	19
496	532	−26.2	18
528	509	−28.7	18
Light ground fog; 2/10 Cs, W.			
Dec. 4, 1:20 p. m.			
14	998	−31.0	32
26	981	−14.0	30
44	958	−14.0	29
51	948	−12.9	29
60	937	−13.0	29
104	885	−15.5	28
121	866	−15.7	28
144	840	−6.4	28
190	791	−8.0	23
202	779	−8.1	22
221	760	−9.2	21
278	707	−12.2	20
334	657	−15.2	19
352	641	−15.7	19
429	578	−21.0	18
487	534	−25.4	18
525	508	−28.0	18
Light ground fog; 2/10 Cs, W.			
Dec. 5, 8:39 a. m.			
14	991	−26.8	64
22	979	−15.8	61
32	966	−15.8	60
71	918	−17.1	61
87	902	−16.5	62
97	887	−16.2	62
145	834	−8.4	64
164	813	−8.4	75
202	775	−10.7	91
208	768	−10.1	72
236	741	−10.3	56
272	707	−12.3	71
305	678	−14.2	84
367	624	−18.5	94
434	570	−23.0	96
479	536	−27.0	100
512	512	−29.1	100
3/10 As, unknown; scattered layers at 4,480 m, estimated.			
Dec. 5, 1:16 p. m.			
14	990	−27.3	54
26	973	−15.5	52
70	917	−17.1	52
87	897	−16.4	54
105	876	−16.3	56
145	833	−9.0	51
170	807	−9.0	66
199	777	−10.4	80
225	750	−10.4	60
234	742	−10.7	57
258	720	−11.1	59
272	706	−11.8	46
341	646	−16.0	64
410	590	−21.0	76
475	540	−25.8	82
519	508	−28.7	78
2/10 As, unknown, estimated at 3,630 m.			
Dec. 6, 8:44 a. m.			
14	991	−30.5	44
24	976	−16.9	46
41	955	−15.8	45
76	912	−17.1	47
83	906	−16.6	47
114	870	−16.5	48
146	836	−11.7	47
157	825	−11.5	46
167	814	−11.6	49
220	750	−14.1	60
253	727	−15.3	62
263	717	−14.9	52
282	700	−14.8	46
361	631	−19.2	37
418	584	−22.9	38
472	542	−27.2	35
523	505	−31.6	40
4/10 St, SW, at 2,330 m, estimated; 4/10 Cs, SW.			
Dec. 6, 1:06 p. m.			
14	991	−29.8	60
24	976	−16.6	59
41	954	−16.1	58
113	869	−16.4	59
143	836	−12.7	64
168	809	−12.6	74
221	754	−14.2	58
239	738	−15.8	69
253	724	−14.7	56
274	704	−15.2	49
345	642	−18.8	39
408	590	−22.7	36
477	535	−25.2	36
519	506	−32.2	42
5/10 St, SW, 2,300 to 3,020 m; 3/10 As, NE.			

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H=Height in decameters above sea level. P=Pressure in millibars. T=Temperature in degree centigrade. R=Relative humidity (percent).

H	P	T	R
Dec. 7, 8:55 a. m.			
14	991	−20.2	64
33	966	−15.2	64
72	916	−17.1	66
110	872	−13.5	78
118	862	−13.5	82
133	846	−12.6	86
161	815	−12.8	91
233	743	−17.8	100
253	723	−15.2	52
275	703	−15.2	45
341	645	−18.6	39
414	584	−23.5	38
469	542	−28.4	45
514	508	−31.9	49
9/10 St, SW, 570 to 2,300 m.			
Dec. 7, 1:07 p. m.			
14	991	−17.5	48
50	946	−14.2	48
72	916	−15.9	50
91	896	−12.6	56
112	872	−11.7	62
125	858	−11.6	65
148	834	−13.3	74
178	802	−15.0	84
186	794	−14.2	84
228	752	−13.8	78
312	673	−19.2	78
334	653	−19.3	82
395	602	−22.4	78
467	546	−27.5	75
527	502	−31.8	70
8/10 St, SSW, 1480,–1,780 m (less than 1/16 in. hard, opaque, smooth ice).			
Dec. 8, 8:51 a. m.			
14	988	−17.4	67
16	983	−12.9	65
26	971	−12.8	65
35	958	−11.5	64
70	915	−12.0	63
96	885	−6.9	60
145	831	−8.9	62
149	828	−8.7	64
205	770	−12.6	77
226	748	−14.0	93
261	715	−15.8	96
309	672	−16.6	96
384	608	−18.0	67
460	548	−22.3	54
501	519	−25.5	52
518	507	−26.3	67
10/10 St, SW (1/8 in. smooth, hard ice) 2,260–2,610 m; 8/10 Cs, unknown.			
Dec. 8, 1:04 p. m.			
14	986	−13.5	91
52	938	−9.4	74
88	897	−9.4	70
105	877	−5.5	63
149	828	−7.6	64
210	765	−10.9	88
251	725	−13.5	95
275	703	−13.5	97
350	637	−16.8	100
365	624	−18.0	100
402	595	−19.7	100
10/10 St, SW (1/2 in. rough, opaque, hard ice) from 2,100 m.			
Dec. 9, 8:59 a. m.			
14	968	−13.5	95
44	929	−4.2	74
56	915	−4.2	71
64	906	−3.6	68
73	895	−3.4	66
107	848	−5.1	70
133	831	−1.6	65
199	764	−6.0	87
208	756	−6.0	85
232	733	−7.5	86
250	716	−7.5	73
306	667	−11.0	85
344	634	−12.5	92
407	586	−13.3	93
Moderate turbulence, 1,070–3,060 m; 10/10 St, 8 (1/4 in. rime) from 3,060 m.			
Dec. 9, 1:14 p. m.			
14	958	−11.2	100
38	927	−2.7	93
92	866	−4.9	92
104	853	−4.8	92
133	823	−0.5	86
167	790	−0.6	74
216	743	−3.7	76
270	693	−5.7	79
284	682	−4.5	72
306	662	−4.9	61
361	617	−9.3	66
418	574	−13.7	81
475	532	−17.8	95
531	492	−22.6	92
8/10 St, SW, from 880 m.			
Dec. 10, 12:53 p. m.			
14	978	−12.0	98
16	975	−9.2	96
26	963	−9.6	98
36	951	−9.6	98
64	916	−11.4	100
76	902	−11.3	100
91	885	−12.2	100
122	850	−12.2	100
140	830	−10.3	100
214	754	−10.3	100
269	702	−13.4	100
322	654	−16.5	100
377	609	−20.5	100
389	600	−21.5	100
Light snow at surface began 1:15 p. m. continued; 10/10 St, SW (1/8 in. rough, opaque ice, frost from 2,140 m), 1,400–3,220 m; 10/10 As, unknown (ice formation) from 3,770 m.			
Dec. 11, 12:58 p. m.			
14	990	−14.3	79
18	985	−11.0	80
46	949	−12.2	85
116	866	−15.2	97
140	839	−16.8	98
157	821	−17.0	100
176	800	−17.7	100
182	794	−17.4	100
215	760	−17.5	100
259	717	−19.1	100
328	653	−21.3	100
366	620	−24.9	100
403	590	−25.4	70
472	536	−30.0	58
522	500	−33.9	52
9/10 St, SW, 220 to 3,600 m; light snow at surface.			
Dec. 12, 9:00 a. m.			
14	993	−26.0	88
21	982	−18.5	88
64	927	−18.6	89
128	851	−23.2	95
144	833	−23.2	96
188	787	−18.5	94
208	765	−19.0	88
249	724	−22.1	87
305	671	−24.0	77
369	614	−26.3	67
421	572	−29.2	56
477	528	−34.0	49
516	501	−36.4	45
4/10 St, unknown, 1,000–1,560 m.			
Dec. 12, 12:59 p. m.			
14	992	−28.0	51
16	988	−22.1	51
31	969	−22.1	54
57	936	−20.3	56
89	896	−22.1	59
130	848	−21.6	65
187	785	−19.2	75
242	730	−22.3	75
268	705	−22.3	70
323	654	−25.3	66
356	625	−25.2	61
408	582	−28.7	56
463	540	−33.1	54
512	503	−36.0	50
7/10 St, W, 980–1,260 m.			
Dec. 13, 12:55 p. m.			
14	984	−27.4	41
53	934	−20.7	44
67	915	−21.0	45
76	905	−20.4	46
113	862	−21.6	48
139	832	−20.8	50
200	767	−20.5	56
215	752	−18.8	58
277	692	−20.8	66
286	685	−19.7	67
322	652	−19.5	71
392	594	−22.9	78
460	540	−28.0	82
515	500	−33.2	84
8/10 St, SW, from 360 m.			
Dec. 14, 9:00 a. m.			
14	982	−35.5	30
26	965	−25.1	32
42	946	−23.8	33
56	929	−20.6	34
71	912	−20.3	34
90	888	−18.5	36
126	848	−18.3	39
150	822	−17.2	39
191	778	−18.4	40
230	739	−21.1	39
240	729	−20.7	37
266	704	−21.0	35
316	657	−24.0	34
360	620	−26.0	34
445	552	−31.5	33
523	494	−35.8	34
Few Cs, unknown.			
Dec. 14, 12:47 p. m.			
14	982	−37.0	29
58	923	−19.1	34
71	908	−19.3	35
93	882	−18.9	37
118	853	−15.5	39
155	813	−16.0	39
221	745	−18.8	36
302	669	−23.2	36
345	629	−26.0	35
366	612	−26.2	35
420	568	−30.1	34
471	528	−33.0	32
517	495	−35.5	32
2/10 As, unknown, not estimated.			
Dec. 16, 9:42 a. m.			
14	977	−35.0	54
24	964	−27.5	56
31	958	−27.2	56
48	936	−27.3	56
59	922	−27.6	57
89	887	−25.0	60
110	862	−25.7	62
118	852	−25.5	64
159	807	−12.8	64
167	799	−12.8	63
235	732	−17.6	66
314	658	−23.5	71
365	614	−27.9	74
414	572	−32.6	76
432	560	−32.1	71
479	522	−34.9	62
527	488	−36.7	59
4/10 St, SW, at 3,600 m, estimated.			
Dec. 16, 1:08 p. m.			
14	978	−36.5	29
26	959	−28.0	30
72	902	−27.1	32
89	881	−25.1	33
107	860	−25.2	34
126	838	−20.5	34
150	812	−18.3	36
157	803	−14.8	37
169	790	−14.8	39
234	726	−19.4	47
306	658	−25.0	53
352	618	−28.9	56
372	601	−28.9	51
427	556	−31.8	44
484	514	−34.8	40
506	498	−34.2	40
7/10 St, SW, 1,820–3,650 m; moderate turbulence, 3,060–4,270 m; 3/10 Cs, SW.			
Dec. 17, 1:11 p. m.			
14	984	−29.5	28
16	979	−25.6	28
54	930	−29.5	29
84	893	−28.1	29
102	872	−27.9	30
111	860	−26.2	30
168	796	−26.1	32
200	762	−17.1	35
215	748	−17.1	35
231	733	−17.9	36
240	724	−18.0	36
304	664	−22.4	36
327	643	−21.5	33
344	628	−22.3	33
416	570	−26.8	42
426	562	−26.5	43
472	527	−30.3	45
508	502	−32.4	48
8/10 St, SE, 220 to 3,440 m; 10/10 As, unknown, from 3,440 m.			
Dec. 18, 9:42 a. m.			
14	995	−27.5	59
24	979	−24.8	61
79	908	−20.7	64
93	890	−24.3	65
115	867	−24.6	66
155	821	−26.9	68
160	816	−26.4	68
178	796	−26.7	69
192	781	−27.3	69
206	765	−27.3	70
243	726	−23.1	72
262	708	−23.2	74
329	647	−26.3	74
359	620	−29.9	77
419	570	−33.7	78
470	529	−35.0	79
477	524	−35.8	79
505	504	−36.5	81
10/10 St, SE, 240 to 2,430 m; light snow at surface.			
Dec. 18, 2:10 p. m.			
14	997	−28.5	84
33	970	−26.3	84
73	916	−27.0	86
82	906	−25.6	86
101	882	−24.8	86
153	823	−27.1	87
196	775	−28.6	88
208	763	−27.7	87
250	719	−25.3	88
272	698	−25.2	88
329	645	−28.0	90
400	584	−33.1	90
454	540	−36.2	90
498	506	−38.9	90
Light snow at ground; 10/10 St, SE, from 330 m.			
Dec. 19, 12:53 p. m.			
14	1,004	−40.6	51
43	963	−23.9	53
72	928	−21.7	55
96	899	−21.7	56
136	853	−18.5	51
148	840	−18.6	50
201	783	−21.1	50
258	727	−24.0	55
311	676	−28.4	57
365	625	−23.2	59
384	609	−33.2	59
442	560	−37.3	59
504	511	−40.6	61
Light ground fog; 2/10 Cs, unknown.			
Dec. 20, 9:14 a. m.			
14	1,004	−39.4	41
24	990	−20.8	44
37	972	−19.3	44
70	929	−14.9	43
98	897	−14.0	40
120	870	−14.0	42
177	808	−17.7	47
230	754	−21.4	57
241	744	−20.9	56
250	735	−21.1	56
277	708	−23.6	54
318	671	−23.6	46
366	627	−26.8	41
412	588	−30.3	39
464	546	−34.2	37
490	527	−35.0	36
524	502	−36.8	36
Moderate ground fog to 160 m; Cloudless above 160 m.			
Dec. 20, 1:13 p. m.			
14	1,004	−38.9	49
22	991	−20.3	52
28	984	−19.9	51
35	974	−20.4	51
42	965	−19.3	51
51	954	−19.2	51
83	914	−14.2	48
126	865	−14.8	48
184	801	−19.1	54
199	787	−18.7	53
208	778	−18.7	51
230	754	−20.5	48
260	724	−20.5	43
330	660	−24.5	39
392	605	−29.0	37
441	564	−32.3	35
486	529	−35.5	34
520	504	−37.7	34
Light ground fog; 1/10 Cs, unknown.			
Dec. 21, 9:12 a. m.			
14	997	−40.0	70
17	992	−24.9	73
21	985	−23.1	73
28	977	−23.1	73
44	956	−15.9	65
64	932	−14.9	61
76	916	−14.9	57
81	912	−14.5	55
98	890	−14.5	50
161	821	−15.5	40
228	751	−17.4	32
291	691	−20.1	29
362	628	−23.7	26
433	570	−29.7	25
486	527	−34.0	24
529	496	−36.5	24
Moderate ground fog to 170 m; cloudless above 170 m.			
Dec. 21, 12:57 p. m.			
14	996	−38.9	64
37	965	−15.4	60
85	906	−15.8	56
160	820	−16.8	43
209	769	−17.5	37
219	758	−17.8	36
280	700	−21.1	35
282	696	−21.6	35
338	646	−24.8	32
347	637	−25.5	32
393	600	−28.3	29
406	588	−29.8	29
453	550	−33.5	28
520	500	−37.0	28
Moderate ground fog to 160 m; cloudless above 160 m.			
Dec. 22, 9:32 a. m.			
14	993	−42.2	54
16	988	−25.6	56
54	938	−14.6	50
105	876	−15.2	44
114	866	−14.6	43
140	837	−14.7	40
150	826	−15.4	38
167	808	−14.1	37
191	785	−14.4	35
261	715	−17.3	31
335	649	−21.6	29
395	599	−25.6	28
445	558	−29.5	27
490	523	−34.3	26
526	497	−35.8	26
Dense ground fog to 160 m; 3/10 Cs, unknown.			

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H=Height in decameters above sea level. T=Temperature in degree centigrade.
P=Pressure in millibars. R=Relative humidity (percent).

H	P	T	R
Dec. 22, 1:08 p. m.			
14	991	−41.1	45
16	987	−25.5	49
39	956	−15.8	45
72	914	−15.8	42
85	901	−16.4	41
101	882	−16.4	40
109	875	−16.1	40
123	858	−17.0	39
128	852	−16.2	38
163	815	−16.3	36
183	795	−15.2	33
243	735	−17.7	30
312	671	−21.5	27
375	614	−25.3	26
437	564	−29.9	25
481	530	−33.5	25
526	497	−36.8	28
Moderate ground fog to 160 m; 3/10 As, unknown.			
Dec. 23, 2:14 p. m.			
14	997	−36.1	56
37	963	−19.2	57
61	933	−15.7	56
92	898	−15.2	57
155	825	−16.8	62
175	804	−16.7	63
202	777	−14.3	65
216	762	−11.6	62
235	743	−11.6	59
263	716	−12.5	55
322	662	−17.2	54
380	612	−22.0	57
434	570	−25.8	60
467	544	−29.0	64
512	511	−33.4	68
Few As, unknown at 4,930 m (estimated).			
Dec. 24, 9:14 a. m.			
14	985	−32.2	66
22	971	−14.7	61
42	946	−14.6	61
55	932	−12.8	60
78	906	−13.0	60
89	892	−12.8	61
114	863	−7.2	58
172	798	−10.4	58
194	779	−10.5	57
230	743	−12.7	54
252	722	−12.5	48
286	691	−14.5	42
341	642	−19.0	40
389	602	−23.0	40
399	595	−23.1	38
426	572	−25.4	37
479	532	−26.8	30
515	506	−26.7	28
3/10 Cs, W.			
Dec. 24, 1:16 p. m.			
14	986	−30.6	83
24	971	−14.3	75
35	960	−14.2	73
50	940	−13.0	71
65	923	−11.2	67
88	897	−11.8	65
113	868	−6.2	59
173	802	−10.3	62
239	737	−14.6	77
302	677	−18.4	81
351	634	−18.6	73
371	618	−19.3	72
427	572	−23.9	75
480	532	−28.4	81
503	516	−29.0	80
524	501	−28.0	82
Moderate turbulence from 1,380 m; 9/10 As, SW, from 3,710 m.			
Dec. 25, 8:59 a. m.			
14	989	−27.8	62
20	981	−16.3	64
43	952	−13.4	63
54	939	−13.4	63
71	918	−10.6	62
83	905	−10.5	62
89	898	−9.7	64
97	890	−9.7	64
115	870	−8.1	65
126	858	−8.3	66
149	831	−8.9	65
216	763	−12.9	74
280	702	−17.2	81
354	636	−22.8	85
411	588	−26.8	84
457	552	−30.4	82
488	528	−33.4	83
508	513	−34.7	81
1/10 As, unknown (not estimated).			
Dec. 25, 1:05 p. m.			
14	990	−28.6	89
33	966	−13.1	82
41	955	−13.3	79
71	917	−10.1	73
128	852	−7.8	70
149	830	−8.7	73
211	767	−12.4	77
287	694	−18.0	91
368	621	−23.7	94
432	568	−28.7	92
495	522	−33.6	89
520	503	−35.5	90
5/10 As, SW, from 3,030 m; moderate turbulence from 4,950 m.			
Dec. 26, 9:09 a. m.			
14	1,011	−21.9	86
20	1,001	−18.3	85
31	989	−17.4	84
48	966	−17.4	86
54	960	−16.1	85
59	951	−15.9	84
69	939	−14.6	87
113	886	−14.9	95
173	819	−11.6	96
222	767	−12.8	75
269	723	−16.5	74
313	683	−20.7	92
347	652	−23.4	91
382	647	−22.0	90
437	578	−26.3	58
445	570	−26.3	53
514	518	−31.8	44
5/10 St, E, 700–2,130 m; moderate turbulence, 2,690–3,470 m; 8/10 As, NW (¼ in. hard ice), 3,130–3,470 m.			
Dec. 26, 1:03 p. m.			
14	1,012	−23.6	80
25	996	−16.1	78
66	942	−15.5	86
114	888	−15.5	97
138	858	−12.3	98
159	836	−11.3	91
211	782	−13.1	75
292	703	−20.3	93
302	694	−17.8	69
358	643	−21.5	60
417	593	−25.5	52
454	564	−27.4	49
469	556	−27.6	46
498	530	−29.5	42
515	518	−30.3	42
5/10 St, E, 1,000–1,420 m; 2/10 Cs, W.			
Dec. 27, 9:00 a. m.			
14	994	−12.9	100
20	985	−8.3	88
44	955	−9.2	84
76	917	−9.2	78
94	895	−6.4	78
100	888	−4.7	81
105	882	−3.7	84
118	868	−3.5	89
136	849	−3.8	100
147	837	−2.9	100
167	816	−2.6	100
219	764	−5.3	100
293	696	−6.6	100
357	640	−8.3	100
404	603	−10.7	100
446	572	−13.4	100
488	540	−16.5	100
522	517	−18.3	100
10/10 St, SW, from 2,190 m.			
Dec. 27, 1:09 p. m.			
14	992	−10.0	98
24	977	−8.7	98
45	951	−10.4	99
59	935	−10.4	100
95	892	−4.1	100
121	862	−4.9	100
167	814	−3.4	100
237	746	−7.1	99
242	741	−6.9	99
261	723	−6.9	100
332	660	−10.1	93
401	604	−13.1	94
469	552	−15.8	93
520	516	−19.0	93
10/10 St, SW, from 240 m.			
Dec. 28, 9:22 a. m.			
14	990	−9.4	98
56	936	−6.5	100
80	910	−6.5	100
108	865	−8.6	100
188	791	−13.5	98
244	735	−17.4	95
266	713	−18.7	94
308	676	−18.9	62
361	628	−23.7	46
375	616	−23.7	46
398	598	−25.5	42
408	588	−25.6	51
426	574	−27.6	64
436	566	−27.1	66
453	552	−27.6	66
471	540	−29.8	67
518	505	−34.4	70
524	501	−34.2	71
Light snow at surface; 10/10 St, SW, 560–2,440 m (3/16 in. hard, opaque, ice from 1,080 m.); 10/10 As, unknown from 3,980 m.			
Dec. 28, 1:07 p. m.			
14	996	−5.8	85
22	984	−2.8	84
71	924	−6.4	89
128	860	−10.2	91
189	794	−14.5	84
248	735	−19.5	82
311	676	−25.1	91
339	650	−26.4	90
368	624	−26.4	69
428	574	−28.9	58
473	540	−31.9	49
522	504	−35.1	45
Moderate turbulence 220–2,480 m; 8/10 St, W, 710–1,720 m; 8/10 St, W, 2,730–3,170 m.			
Dec. 29, 9:15 a. m.			
14	1,008	−5.7	97
61	947	−4.6	74
130	869	−8.4	74
177	816	−11.1	89
188	806	−10.9	89
214	779	−11.1	88
223	770	−10.7	86
274	721	−12.1	81
324	676	−14.1	80
369	637	−15.2	85
381	627	−14.4	81
453	570	−18.9	93
505	532	−22.0	92
524	518	−21.5	90
4/10 St, W, 310–1,020 m; 9/10 As, W, from 4,530 m.			
Dec. 29, 1:27 p. m.			
14	1,005	−5.0	89
22	994	−4.5	88
29	984	−3.7	79
82	921	−5.9	70
89	913	−5.0	56
99	900	−5.0	56
153	840	−8.3	79
166	826	−7.9	84
173	818	−6.4	59
207	784	−6.9	38
245	747	−8.8	32
275	718	−10.5	46
319	678	−10.9	48
325	673	−10.2	45
346	654	−10.6	38
398	612	−14.6	33
407	605	−14.3	60
417	598	−14.5	63
484	546	−18.7	82
515	525	−20.0	87
525	518	−19.6	83
10/10 As, W.			
Dec. 30, 3:27 p. m.			
14	1,002	−4.7	100
24	988	1.0	92
61	944	−1.6	100
108	890	−4.6	85
172	820	−10.1	95
193	799	−11.5	71
227	764	−12.8	85
238	753	−13.7	69
308	687	−17.1	53
364	638	−18.9	59
426	586	−23.9	66
469	552	−26.5	62
519	515	−28.6	47
8/10 St, W, 310–2,460 m; 5/10 As, W, 3,040–4,000 m.			
Dec. 31, 9:16 a. m.			
14	1,004	−2.2	78
17	998	2.2	66
22	992	2.2	64
81	923	−1.7	75
122	876	−4.5	94
182	812	−7.4	100
243	751	−10.9	91
286	710	−13.2	86
302	695	−12.8	50
312	686	−11.6	38
329	671	−11.7	33
376	630	−15.0	31
447	574	−19.8	48
506	530	−23.6	61
534	510	−23.9	66
8/10 St, W, 1,030–1,950 m; 10/10 As, W, from 3,760 m.			
Dec. 31–1:20 p. m.			
14	1,003	−3.6	85
29	984	0.9	77
70	936	−0.9	74
133	866	−5.2	95
150	846	−5.4	92
161	835	−6.3	93
190	806	−6.2	70
199	796	−5.4	56
270	726	−10.5	72
288	710	−10.5	83
362	645	−15.4	94
403	610	−16.3	93
411	605	−16.9	95
462	566	−19.6	95
504	534	−21.8	94
547	504	−23.9	94
8/10 As, W, 4,110 to 4,620; 2/10 Cs, W.			
Jan. 1, 9:25 a. m.			
14	987	1.1	60
24	973	4.7	46
40	955	5.2	42
128	858	0.6	43
141	843	0.7	42
206	777	−4.1	42
276	711	−9.4	50
292	697	−9.5	46
356	641	−13.3	57
417	592	−17.9	59
477	546	−22.5	71
509	523	−24.4	74
534	505	−25.4	71
9/10 Cs, W.			
Jan. 1, 1:01 p. m.			
14	990	−1.8	71
21	979	5.2	62
25	974	4.7	61
86	905	0.3	72
149	836	−4.0	81
232	753	−10.0	98
237	747	−10.3	90
251	733	−9.5	80
269	716	−9.8	70
304	685	−12.2	75
332	660	−13.0	87
400	604	−18.2	90
456	560	−21.4	93
505	524	−24.7	90
526	509	−24.7	87
534	504	−25.7	84
Moderate turbulence, 250–1,490 m; 5/10 St, W, 1,660–2,430 m; 8/10 As, 3,220–5,240 m.			
Jan. 3, 1:20 p. m.			
14	1,028	−20.0	74
59	966	−18.1	80
98	917	−12.0	87
116	897	−13.1	93
154	854	−14.7	99
178	828	−15.4	100
7/10 St, NW, 320 to 1,010 m; 10/10 St, NW (1/4 in. smooth, hard, opaque ice), 1,160–1,540 m.			
Jan. 4, 8:51 a. m.			
14	1,027	−22.8	74
26	1,009	−9.1	74
84	938	−9.0	68
106	912	0.1	37
115	902	1.0	31
128	888	0.9	29
204	809	2.1	20
257	758	−5.9	17
310	707	−9.3	16
373	652	−13.8	16
434	603	−18.1	16
489	560	−22.5	17
536	525	−25.3	16
6/10 Cs, W; light smoke and haze at surface.			
Jan. 4, 1:02 p. m.			
14	1,023	−23.0	87
36	993	−7.0	62
70	948	−4.4	46
85	932	1.2	39
100	914	1.2	35
109	906	2.3	32
138	874	2.3	29
205	804	−1.1	21
265	745	−4.9	20
329	687	−9.7	19
380	642	−13.7	18
442	593	−18.3	18
458	580	−19.0	17
470	570	−19.2	19
494	552	−21.7	24
527	528	−22.0	32
10/10 As, W, from 5,270 m; light smoke and haze at surface.			
Jan. 5, 8:52 a. m.			
14	1,006	−15.0	88
39	972	−1.4	49
62	945	−2.1	40
72	933	0.9	36
86	917	0.7	34
103	897	−0.6	31
116	883	−1.4	30
160	847	−1.4	26
235	761	−5.9	26
318	684	−9.7	37
382	630	−10.7	57
443	584	−11.5	70
513	532	−16.4	84
534	517	−15.8	72
Moderate turbulence from 1,030 m; 9/10 As, S, from 4,180 m.			
Jan. 5, 1:14 p. m.			
14	998	−14.0	96
21	987	−5.6	73
37	969	0.3	51
66	934	−1.4	45
93	903	−2.1	43
108	885	1.9	38
158	831	−1.4	30
216	773	−4.5	29
259	732	−6.9	33
314	682	−8.8	49
375	630	−10.3	81
426	591	−11.2	84
492	542	−14.9	88
529	516	−17.2	86
Moderate turbulence, 660–4,260 m; 9/10 Sc, S, 1,910–4,920 m; 10/10 As, S, from 4,920 m.			

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H = Height in decameters above sea level. T = Temperature in degree centigrade.
P = Pressure in millibars. R = Relative humidity (percent).

Jan. 6, 1:33 p. m.

H	P	T	R
14	1,012	−4.8	86
30	992	−0.9	81
76	936	−3.0	82
133	871	−6.9	88
180	818	−10.8	92
198	800	−10.8	86
265	733	−14.6	64
300	701	−15.3	48
369	639	−20.8	37
437	582	−26.2	33
466	560	−28.8	32
490	542	−29.0	33
508	527	−31.5	35
520	519	−31.6	34
526	514	−32.7	37

7/10 St, W, 1,200 to 2,090 m; 10/10 Cs, W.

Jan. 7, 9:44 a. m.

H	P	T	R
14	990	−1.0	92
26	976	1.7	66
50	946	1.7	61
143	843	−4.2	76
176	808	−6.2	84
259	727	−10.9	90
311	681	−14.0	93
368	631	−16.4	86
432	580	−20.4	86
475	546	−23.3	86
521	513	−23.9	84

Moderate turbulence, 500–1,430 m; 10/10 St, W, from 1,430 m.

Jan. 7, 1:42 p. m.

H	P	T	R
14	988	−0.4	100
24	973	2.2	77
80	910	−0.7	76
134	850	−4.5	89
149	833	−4.2	82
188	793	−6.9	90
252	731	−11.5	96
280	705	−12.7	96
300	687	−13.2	92
363	633	−17.2	92

Light snow at surface; 10/10 St, S, from 1,880 m; moderate turbulence from 2,900 m.

Jan. 8, 8:55 a. m.

H	P	T	R
14	1,008	−17.3	83
19	999	−7.0	86
34	981	−6.9	86
56	953	−7.8	83
67	941	−7.8	84
76	930	−6.9	85
87	918	−6.9	81
100	903	−6.0	64
154	844	−9.4	66
201	793	−12.8	67
224	769	−13.6	66
243	751	−13.6	46
287	709	−16.9	39
341	658	−21.0	34
398	609	−25.0	32
452	566	−29.8	34
506	524	−35.4	35
534	504	−36.8	35

7/10 St, W, 340–1,000 m; moderate ground fog.

Jan. 8, 1:45 p. m.

H	P	T	R
14	1,014	−12.9	99
23	1,002	−7.4	97
58	957	−9.2	100
109	898	−7.9	87
173	826	−11.4	74
181	819	−11.0	68
253	745	−14.0	47
298	703	−17.3	36
355	651	−22.0	34
411	603	−26.4	32
466	558	−31.4	33
527	502	−31.4	29

Light ground fog; 8/10 St, W, 370–860 m.

Jan. 9, 1:52 p. m.

H	P	T	R
14	1,010	2.0	89
16	1,006	4.3	82
74	935	0.1	100
90	917	−0.3	100
98	908	0.1	99
116	887	−1.0	100
130	872	−1.9	100

Moderate turbulence 160–1,300 m; 9/10 St, SW (1/4 in. rime) from 1,160 m.

Jan. 12, 9:36 a. m.

H	P	T	R
14	1,013	−14.4	90
76	934	−14.4	90
97	908	−13.8	89
122	880	−13.8	94
157	842	−14.9	98
171	826	−14.6	95
234	762	−18.3	100
247	747	−18.7	98
305	693	−22.7	96
339	662	−23.0	93
363	640	−24.4	82
372	632	−23.7	56
406	603	−24.3	54
471	552	−26.1	41
518	517	−28.2	34

4/10 St, SW, 360–1,560 m; 8/10 St, SW, 2,220–2,800 m.

Jan. 12, 1:41 p. m.

H	P	T	R
14	1,015	−14.9	99
22	1,002	−13.6	95
86	924	−15.0	100
102	906	−14.7	100
109	898	−13.6	100
177	822	−16.7	100
187	813	−16.2	88
200	800	−16.2	87
243	757	−18.5	77
284	715	−21.0	65
347	656	−22.2	49
418	596	−23.0	40
448	572	−25.0	38
497	534	−25.4	35
524	515	−24.4	34

5/10 St, SW, 1,530 to 1,880 m; 3/10 Cs, W.

Jan. 14, 9:46 a. m.

H	P	T	R
14	1,000	−10.8	100
32	976	−7.8	100
42	963	−4.9	100
51	952	−5.0	100
64	936	−4.6	100
99	898	−4.8	100
161	829	−8.4	96
206	782	−11.2	95
250	739	−14.0	94
304	689	−17.3	92
343	653	−20.9	91

10/10 St, W (1/4 in. rime) from 420 m; snow flurries at surface.

Jan. 15, 12:22 a. m.

H	P	T	R
14	996	−7.0	100
20	987	−5.1	99
36	967	−5.0	91
67	929	−7.0	89
78	915	−5.6	66
89	904	−5.6	62
168	815	−10.9	75
178	804	−10.9	84
252	751	−13.4	87
245	737	−12.1	88
313	675	−12.8	93
351	641	−14.0	94
373	624	−15.5	97
428	580	−16.8	91
434	576	−17.6	89
456	558	−17.8	87
493	532	−20.5	88
514	517	−20.5	91

Moderate turbulence from 1,870 m; 6/10 As, W, from 5,140 m.

Jan. 15, 1:39 p. m.

H	P	T	R
14	983	−3.5	96
17	978	−2.1	92
38	952	−3.4	86
70	914	0.8	66
145	832	−5.0	100
192	785	−6.9	100

Light snow at surface; strong turbulence from 700 m; 7/10 St, SW (1/2 in. rime), from 1,450 m.

Jan. 15, 4:00 p. m.

H	P	T	R
14	982	−4.5	98
42	947	1.8	64
55	932	1.8	64
126	852	−3.5	99
161	816	−5.3	96
171	805	−5.3	82
243	735	−10.5	77
316	669	−15.2	74
340	648	−15.2	42
401	598	−19.1	31
479	538	−25.6	32
529	502	−28.6	58

Moderate turbulence from 550 m; 8/10 St, SW, 1,600–2,720 m.

Jan. 16, 2:25 p. m.

H	P	T	R
14	1,000	−5.3	74
18	994	−2.7	72
67	934	−6.4	75
120	874	−11.0	90
154	836	−11.8	84
178	812	−12.7	77
228	760	−14.7	68
287	705	−14.6	42
326	669	−18.0	39
384	619	−22.4	36
439	574	−27.2	38
492	534	−32.0	42
537	500	−36.1	42

Moderate turbulence to 1,540 m; strong turbulence from 1,780 m; 7/10 St, SW, 710–1,440 m.

Jan. 17, 8:35 a. m.

H	P	T	R
14	1,011	−13.8	82
19	1,001	−8.7	80
81	926	−11.6	83
89	916	−11.5	66
128	871	−12.5	51
180	813	−14.7	40
246	745	−18.4	36
320	675	−24.9	35
406	600	−27.7	34
497	527	−33.7	34
524	509	−33.8	34

1/10 St, W, at 1,340 m (estimated).

Jan. 17, 1:44 p. m.

H	P	T	R
14	1,016	−12.5	57
18	1,009	−8.4	56
75	936	−12.8	59
99	910	−12.7	58
116	888	−11.5	53
178	821	−14.9	40
211	787	−15.2	37
257	740	−19.3	37
314	686	−23.5	36
364	640	−25.1	36
413	598	−24.9	34
477	546	−29.8	35
518	516	−32.2	37

2/10 Cs, SW.

Jan. 18, 8:58 a. m.

H	P	T	R
14	1,006	−15.9	76
39	973	−8.3	51
86	917	−9.7	46
115	884	−5.3	38
161	834	−7.8	32
226	767	−12.2	62
235	759	−12.2	68
245	750	−11.3	73
321	679	−12.7	92
384	626	−16.2	95
442	580	−19.0	94
492	542	−22.5	93
527	517	−24.1	93

10/10 St, SW, from 1,610 m.

Jan. 19, 9:23 a. m.

H	P	T	R
14	1,004	−13.3	92
62	941	−6.1	80
91	908	−6.9	85
106	890	−5.1	66
129	865	−5.4	70
170	821	−6.8	83
204	786	−8.5	93
214	776	−8.3	92
239	752	−10.1	95
254	736	−10.1	86
268	723	−11.0	80
290	703	−11.4	52
320	675	−13.5	44
347	652	−12.1	33
357	644	−12.5	37
404	605	−15.8	44
439	578	−19.1	52
460	562	−18.7	65
509	526	−18.9	81
525	515	−19.7	88

3/10 St, SW, 135 to 2,040 m; 9/10 As, W, from 3,960 m.

Jan. 20, 4:35 p. m.

H	P	T	R
14	985	1.2	100
20	976	3.7	94
69	918	0.8	100
106	878	0.4	100
191	799	−3.4	100
237	745	−6.0	100
280	705	−8.9	97

Moderate rain; 10/10 St, SW (1/4 in. rime) from 690 m.

Jan. 21, 10:55 a. m.

H	P	T	R
14	995	0.3	100
19	986	2.1	91
32	971	2.0	81
91	903	−1.5	81
150	838	−6.0	95
213	773	−9.5	98
269	718	−13.0	98
280	708	−13.4	98
291	698	−13.7	98
296	694	−13.1	98
340	655	−15.2	95
353	644	−15.2	74
360	638	−14.6	51
412	597	−16.1	39
441	574	−19.2	43
480	544	−20.4	65
518	517	−22.3	80

Strong turbulence from 1,970 m; 9/10 St, SW (1/4 in. rough, opaque ice), 2,130–2,690 m; 9/10 St, unknown (ice), 2,800–2,910 m; 10/10 As, unknown, 3,130–3,530 m.

Jan. 21, 2:10 p. m.

H	P	T	R
14	992	−1.4	89
18	987	1.0	72
94	896	−5.0	79
161	824	−8.9	87
168	816	−8.8	81
230	754	−12.8	76
292	695	−16.5	86
298	688	−14.5	60
345	647	−18.2	58
365	628	−19.4	69
380	617	−19.0	83
417	587	−20.8	85
423	583	−20.6	85
484	536	−24.4	83
523	508	−27.5	79

10/10 As, SW, from 3,450 m.

Jan. 22, 10:42 a. m.

H	P	T	R
14	1,013	−16.2	68
38	980	−16.5	58
55	959	−18.9	60
95	908	−21.2	71
110	890	−19.0	64
186	804	−26.2	71
206	782	−19.8	44
214	772	−20.8	39
238	748	−20.8	34
293	691	−24.5	28
358	634	−29.1	25
391	606	−31.3	24
458	550	−37.0	22
518	504	−39.4	21

3/10 St. SW. 2,010 to 5,180 m: strong turbulence throughout flight.

Jan. 22, 2:15 p. m.

H	P	T	R
14	1,018	−16.6	63
18	1,013	−16.2	65
39	986	−17.4	62
44	980	−16.6	61
62	957	−19.0	61
70	946	−17.0	61
126	878	−21.1	58
133	870	−20.2	55
163	836	−21.2	50
172	826	−19.6	49
194	804	−18.8	42
247	750	−20.8	32
303	694	−25.6	39
355	646	−30.2	45
371	631	−30.2	38
412	596	−32.5	36
481	540	−34.8	32
525	506	−37.2	29

1/10 St, unknown.

Jan. 23, 8:51 a. m.

H	P	T	R
14	1,000	−11.6	57
28	983	−11.6	51
33	976	−10.0	48
104	890	−14.2	39
144	846	−7.6	34
204	784	−12.0	85
253	726	−14.5	100
314	680	−18.2	100
349	649	−20.6	100
373	627	−20.1	96
394	610	−20.1	95
434	578	−23.7	96
443	571	−23.0	96
460	558	−23.2	95
467	553	−22.6	95
513	520	−25.8	93

Moderate turbulence, 1,040–3,730 m; strong turbulence from 3,730 m; 10/10 St, SE, from 2,040 m.

Jan. 23, 2:07 p. m.

H	P	T	R
14	994	−9.4	89
47	951	−11.7	77
73	920	−13.5	80
82	910	−11.1	89
94	896	−10.7	98
104	884	−9.2	100
113	874	−9.2	100
133	852	−9.8	100
143	842	−8.2	100
150	834	−8.2	100
166	816	−8.4	100
209	773	−11.1	100
301	685	−16.7	100
345	645	−20.2	100
384	611	−23.5	97
429	575	−26.6	95
477	538	−29.4	94
519	506	−32.6	92

Light snow, moderate turbulence, 470–1,660 m; strong turbulence from 1,660 m; 10/10 St, SE, 710–3,010 m; 10/10 As, unknown (1/8 in. smooth, opaque ice) from 4,290 m.

Jan. 24, 8:54 a. m.

H	P	T	R
14	993	−6.0	89
24	981	−6.7	86
69	926	−9.6	93
135	850	−14.0	93
204	777	−19.6	92
267	712	−24.0	93
277	704	−22.7	92
311	673	−22.6	92
324	662	−22.0	92
337	650	−22.0	92
406	591	−26.2	88
462	547	−30.9	81
510	512	−34.6	79

Light snow at surface; 10/10 St, SW, 690–2,040 m; 10/10 As, unknown, from 4,060 m.

Jan. 25, 8:52 a. m.

H	P	T	R
14	1,022	−20.1	50
67	950	−21.5	50
82	932	−18.8	51
126	878	−18.8	52
184	812	−22.6	51
191	805	−21.8	51
199	796	−21.8	52
206	789	−21.2	52
275	718	−25.8	31
316	680	−26.5	28
398	607	−29.8	24
456	558	−30.8	22
514	515	−33.7	20

1/10 As, unknown, at 2,930 m (estimated).

Jan. 25, 2:04 p. m.

H	P	T	R
14	1,025	−24.0	94
26	1,008	−20.9	92
35	998	−20.9	91
62	959	−23.1	95
73	944	−22.9	95
88	926	−18.8	83
117	892	−20.0	79
122	884	−19.2	78
135	870	−19.9	75
153	850	−18.9	51
213	784	−21.8	39
271	724	−24.2	34
323	675	−27.9	31
380	622	−29.6	28
393	612	−29.2	28
428	582	−29.2	28
466	552	−31.7	32
509	520	−33.7	42

1/10 As, unknown, at 4,330 m (estimated).

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H = Height in decameters above sea level. P = Pressure in millibars. T = Temperature in degree centigrade. R = Relative humidity (percent).

H	P	T	R
Jan. 26, 8:34 a. m.			
14	1,024	−24.2	86
54	970	−15.6	54
69	951	−16.2	51
84	922	−13.0	39
89	927	−13.0	36
109	902	−10.7	44
113	896	−10.7	46
159	847	−13.4	78
165	838	−13.0	56
177	826	−13.1	45
210	792	−15.2	68
220	782	−15.2	79
230	772	−15.6	85
243	759	−14.8	81
260	742	−12.9	66
276	726	−12.2	86
294	710	−13.2	73
302	703	−13.2	60
314	692	−14.7	81
324	682	−14.5	89
365	647	−17.2	97
370	642	−16.6	97
374	638	−16.8	97
382	632	−16.8	96
430	592	−19.0	96
468	562	−20.8	83
506	534	−23.6	87
521	524	−24.0	91

7/10 As, NW, 3,050–3,720 m; 10/10 As, SW, 4,680–5,060 m.

Jan. 26, 2:27 p. m.

H	P	T	R
14	1,023	−18.8	90
24	1,008	−16.8	88
56	966	−16.3	74
75	942	−16.1	91
84	931	−9.4	98
111	900	−10.4	98
154	850	−10.8	95
160	844	−10.2	96
171	830	−10.4	98
214	786	−8.2	98
245	756	−8.7	99
293	710	−11.2	99
340	668	−13.6	99
384	631	−16.0	99
422	600	−17.1	98
484	551	−21.1	94
519	527	−24.0	87

Light snow; 9/10 St, NW, 360–2,930 m; frost 4,220–4,840 m.

Jan. 27, 8:19 a. m.

H	P	T	R
14	1,011	−19.8	98
47	967	−10.0	74
56	955	−10.0	74
80	928	−3.7	68
104	899	−0.9	63
121	880	−0.9	57
151	848	−2.7	60
172	825	−2.5	60
198	800	−4.2	66
207	791	−4.2	52
269	731	−8.0	47
275	724	−8.8	46
297	704	−10.8	43
322	682	−11.4	47
371	640	−13.7	44
377	634	−13.0	42
382	629	−13.0	40
415	604	−15.4	40
421	600	−14.9	40
488	548	−19.2	39
526	521	−21.8	39

3/10 As, W, 2,680–3,480 m; 4/10 Cs, W.

Jan. 27, 2:17 p. m.

H	P	T	R
14	1,017	−12.4	94
31	993	−14.8	94
39	982	−14.8	98
50	969	−11.1	98
55	961	−10.8	98
63	952	−10.4	98
79	934	−6.6	98
112	894	−8.8	98
126	880	−7.5	98
178	822	−7.9	98
225	774	−10.6	85
233	766	−10.6	87
278	722	−14.0	91
282	718	−13.8	86
289	712	−14.2	83
345	662	−19.4	94
352	655	−17.8	61
360	649	−17.0	44
364	644	−17.0	37
396	618	−18.4	33
430	591	−18.8	27
467	562	−18.6	25
494	543	−20.2	23
502	537	−20.2	23
523	522	−22.6	21

Light snow at surface; 1/10 in. rough, opaque, hard ice, 630 to 1,120 m; 10/10 St, W, 790–1,120 m.

Jan. 28, 8:40 a. m.

H	P	T	R
14	1,018	−17.5	100
24	1,005	−8.6	96
32	993	−7.5	80
46	975	−7.4	80
61	955	−8.4	84
69	946	−8.2	82
76	936	−7.6	77
90	920	−3.5	50
102	906	−3.7	35
107	899	−3.1	33
113	892	−3.2	30
138	866	−5.0	29
148	854	−4.8	27
159	842	−3.1	24
171	828	−3.1	22
204	796	−4.7	22
250	751	−5.1	35
303	702	−8.9	35
351	659	−11.4	33
411	609	−16.0	35
481	554	−21.6	34
528	520	−25.3	33

Light ground fog; 1/10 As, unknown, at 5,130 (layer estimated); few Cs, unknown.

Jan. 28, 2:02 p. m.

H	P	T	R
14	1,014	−12.0	100
22	1,002	−11.1	82
42	976	−8.1	75
50	966	−8.4	69
63	950	−7.3	57
71	939	−4.0	39
87	922	−3.2	34
115	890	−3.1	30
119	886	−2.8	31
134	870	−3.2	31
192	808	−5.2	20
248	752	−9.4	16
257	744	−9.4	16
269	732	−7.8	18
282	718	−8.2	21
325	681	−11.9	53
361	651	−13.8	74
446	581	−20.4	63
460	570	−20.2	55
533	516	−25.8	71

5/10 St., W, 1,320–5,330 m.

Jan. 29, 2:58 p. m.

H	P	T	R
14	1,022	−5.5	85
18	1,015	−5.2	80
44	981	−6.4	78
108	904	−11.7	98
123	888	−12.0	94
133	876	−11.6	83
145	862	−14.2	89
154	852	−13.3	79
230	773	−18.8	77
241	762	−17.2	66
254	748	−18.4	63
296	707	−20.9	61
307	698	−20.9	61
364	645	−25.6	59
371	639	−25.6	60
436	583	−30.4	61
495	537	−35.9	56
538	504	−39.8	54

8/10 St, NW, 1,340–1,640 m; 3/10 As, unknown, from 3,140 m.

Jan. 30, 8:25 a. m.

H	P	T	R
14	1,032	−18.7	96
22	1,019	−11.3	96
52	980	−11.7	99
61	968	−10.8	94
72	952	−10.6	83
79	945	−9.0	63
108	908	−9.4	57
128	884	−9.8	55
150	860	−10.4	51
228	775	−16.8	68
284	720	−19.6	64
295	710	−18.5	45
357	653	−22.9	35
406	609	−26.4	29
414	603	−25.8	28
429	590	−26.4	26
457	567	−24.6	24
469	556	−25.7	23
484	546	−24.9	23
532	511	−27.4	23

Moderate ground fog; 9/10 St, E, 290–500 m.

Jan. 30, 2:07 p. m.

H	P	T	R
14	1,032	−14.0	94
24	1,019	−12.2	89
23	1,006	−12.0	81
52	980	−10.2	74
61	969	−10.4	73
78	950	−9.0	66
113	906	−9.5	66
174	838	−13.3	61
237	772	−17.9	74
253	756	−17.7	55
303	707	−19.5	44
352	663	−20.9	34
404	617	−24.3	28
408	613	−23.7	28
425	600	−24.5	27
434	590	−23.5	26
501	540	−24.0	24
524	523	−26.9	24

Moderate ground fog to 190 m; cloudless.

Jan. 31, 8:39 a. m.

H	P	T	R
14	1,027	−32.2	82
37	996	−11.4	68
69	955	−12.3	67
80	942	−12.0	63
102	913	−12.0	59
111	902	−11.4	57
124	888	−11.0	55
191	815	−13.9	46
197	808	−13.5	45
259	747	−17.0	39
264	740	−16.8	36
290	716	−17.9	32
301	706	−17.6	30
357	655	−20.1	27
378	635	−19.4	26
417	603	−20.0	26
421	600	−19.2	26
505	535	−25.0	29
516	527	−24.8	29
522	523	−25.0	29

Moderate ground fog; cloudless above.

Jan. 31, 2:36 p. m.

H	P	T	R
14	1,025	−23.3	89
33	1,000	−11.1	68
39	991	−11.1	65
43	984	−10.2	60
87	932	−12.1	56
117	896	−11.0	52
128	885	−10.6	51
167	841	−10.8	39
192	813	−10.2	32
250	754	−14.0	26
277	727	−14.2	24
282	723	−13.8	23
310	697	−13.3	21
369	645	−16.2	19
379	636	−15.4	19
422	601	−16.8	18
481	554	−20.9	22
528	519	−24.6	30

Light ground fog; 1/10 Cs, unknown.

Feb. 1, 8:14 a. m.

H	P	T	R
14	1,021	−31.1	68
37	991	−10.9	64
61	961	−10.6	60
110	902	−6.4	44
159	848	−8.7	35
215	789	−13.2	51
242	761	−13.3	58
252	752	−11.9	58
291	715	−14.0	64
312	696	−13.3	65
321	688	−13.3	67
352	660	−15.3	70
378	637	−15.4	51
448	582	−20.6	64
519	527	−24.9	60

Light ground fog; 1/10 Cs, unknown.

Feb. 1, 2:41 p. m.

H	P	T	R
14	1,020	−23.5	90
24	1,007	−9.4	66
37	990	−9.4	59
54	967	−9.4	55
59	960	−8.4	52
68	949	−8.2	45
93	920	−8.2	42
120	890	−8.8	37
134	874	−9.4	36
157	848	−10.1	35
182	821	−11.8	42
209	793	−13.2	55
275	727	−12.8	42
318	688	−14.0	46
360	651	−16.5	47
372	641	−16.5	45
432	592	−19.4	40
477	558	−21.7	33
518	526	−25.4	29

Light ground fog; few Cs, unknown.

Feb. 2, 8:17 a. m.

H	P	T	R
14	1,017	−28.3	80
44	978	−7.2	46
66	951	−7.2	36
78	937	−7.5	33
97	914	−6.5	31
120	887	−6.3	34
132	875	−7.1	36
150	856	−6.2	28
186	816	−7.5	22
220	781	−7.9	27
247	755	−9.5	33
264	739	−9.8	30
334	676	−15.5	35
386	629	−19.2	44
439	586	−23.7	59
449	578	−23.7	60
531	515	−29.6	73

Light ground fog; 5/10 Cs, NE.

Feb. 2, 2:42 p. m.

H	P	T	R
14	1,015	−21.0	89
33	990	−9.0	62
41	980	−9.0	56
48	972	−7.3	51
55	962	−7.2	46
64	950	−7.2	44
72	940	−7.4	44
86	924	−7.0	45
105	901	−5.0	38
135	868	−4.7	30
157	845	−5.4	29
226	773	−8.7	33
298	705	−14.2	49
317	687	−14.2	60
366	644	−17.8	65
422	598	−22.8	77
434	587	−23.3	77
445	580	−21.2	65
461	566	−21.4	60
528	516	−26.7	50

Light ground fog; few As, at 4,280 m (estimated); 1/10 Cs, NE.

Feb. 3, 8:32 a. m.

H	P	T	R
14	1,011	−27.4	83
26	994	−17.5	75
35	980	−15.7	73
43	971	−11.5	58
49	963	−11.6	49
86	918	−5.5	36
92	910	−5.5	33
101	900	−3.6	31
144	853	−3.8	25
186	809	−6.6	27
196	799	−6.8	26
257	738	−9.6	27
328	673	−13.2	34
365	642	−16.1	37
385	625	−16.6	42
395	618	−15.7	45
402	611	−15.7	47
439	582	−18.0	55
520	521	−24.7	75

Light ground fog; moderate turbulence from 3,280 m; 6/10 As, NW, from 4,390 m.

Feb. 3, 2:35 p. m.

H	P	T	R
14	1,010	−21.8	80
38	977	−12.0	68
50	962	−11.8	68
66	942	−9.4	57
71	935	−9.4	54
101	903	−2.9	40
121	879	−2.6	31
188	808	−6.0	31
240	757	−9.2	36
310	692	−12.6	35
345	660	−13.6	33
355	652	−13.4	32
370	639	−13.5	32
406	610	−16.4	44
414	604	−16.4	47
476	556	−20.3	66
484	550	−20.3	65
525	520	−23.2	62

Light ground fog; 5/10 As, NW.

Feb. 4, 9:42 a. m.

H	P	T	R
14	1,010	−29.2	87
31	986	−20.7	83
52	958	−17.0	77
61	947	−17.0	74
69	937	−15.5	72
80	923	−15.4	70
94	906	−15.7	68
124	869	−8.9	43
154	836	−8.5	44
169	819	−6.2	37
214	773	−8.6	65
304	690	−13.1	40
311	683	−12.3	38
371	632	−15.6	30
427	586	−18.4	26
484	544	−22.0	25
526	513	−25.1	46

Light ground fog; 2/10 St, W, 2,340–2,500 m; 6/10 As, W, from 4,990 m.

Feb. 4, 2:40 p. m.

H	P	T	R
14	1,011	−21.9	85
38	978	−19.3	82
50	961	−18.6	91
84	922	−16.1	94
97	906	−13.6	95
123	875	−10.9	94
136	863	−11.3	89
149	847	−11.3	85
154	841	−10.3	82
190	803	−12.7	85
234	758	−15.2	96
245	747	−14.0	96
274	718	−14.2	95
283	711	−14.4	95
360	642	−19.9	92
377	627	−21.4	90
404	605	−21.3	41
413	599	−20.9	39
436	580	−21.2	37
516	519	−27.9	33

10/10 St, W, (3/16 in. hard, opaque ice), 500–840 m; 10/10 St, unknown (ice), 1,900–2,740 m; Moderate turbulence from 3,600 m; light snow began 3 p. m. continued.

Feb. 5, 2:30 p. m.

H	P	T	R
14	1,009	−12.8	100
34	982	−15.4	100
47	968	−14.4	100
57	955	−14.6	99
94	910	−14.0	99
114	887	−14.9	98
133	866	−13.2	100
178	816	−15.0	97
194	802	−13.8	71
205	789	−14.0	65
212	782	−13.7	68
236	758	−15.5	86
242	753	−15.0	88
314	684	−17.5	92
372	633	−20.6	81
441	577	−25.1	85
463	559	−26.6	91
474	550	−26.4	85
506	527	−28.8	97
516	520	−27.9	88

10/10 St, W (1/16 in. rough, opaque ice), 570–1,330 m; 10/10 As, unknown, from 5,060 m.

Feb. 6, 2:39 p. m.

H	P	T	R
14	1,000	−11.7	100
36	972	−11.5	99
59	944	−12.7	99
80	918	−11.0	100
100	894	−11.8	100
112	880	−10.9	80
136	854	−10.9	57
175	812	−13.6	82
200	789	−14.5	60
224	764	−15.5	98
248	740	−15.5	100
259	728	−14.5	100
302	690	−15.3	100
314	680	−13.8	98
329	666	−13.8	86
403	604	−18.4	100
434	579	−20.3	96
450	567	−20.0	48
497	532	−22.7	41
525	512	−25.6	52

3/10 St, E, 490–1,910 m; 5/10 St, E, 2,240–2,480 m; moderate turbulence, 3,140–4,970 m; strong turbulence from 4,970 m; 5/10 As, unknown (1/16 in. smooth, opaque ice), 4,030–4,340 m

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H=Height in decameters above sea level. P=Pressure in millibars. T=Temperature in degree centigrade. R=Relative humidity (percent).

Feb. 7, 10:37 a. m.

H	P	T	R
14	984	−7.2	100
28	967	−9.2	95
36	957	−8.2	99
50	942	−7.0	100
133	848	−10.8	100
140	840	−10.7	96
200	778	−14.4	89
272	707	−21.1	92
310	672	−23.4	90
344	642	−24.0	89
409	586	−28.2	86
472	538	−32.4	84
515	506	−36.6	84

Moderate snow at surface; 10/10 St, SW (1/8 in. smooth, opaque ice from 1,550 to 3,100 m), 360–3,100 m; 5/10 As, unknown, from 3,100 m.

Feb. 7, 2:45 p. m.

H	P	T	R
14	984	−3.9	93
84	898	−8.9	100
128	851	−12.2	100
209	766	−17.8	100
275	701	−20.7	96
335	647	−24.8	93
398	593	−30.0	90
454	547	−34.8	88
463	540	−34.0	88
517	501	−37.9	82

Moderate turbulence throughout flight; 10/10 St, SW, 840–3,010 m; heavy haze from 1,280 m; moderate snow began 3:15 p. m. at surface.

Feb. 8, 8:14 a. m.

H	P	T	R
14	985	−17.8	100
16	980	−12.6	100
22	973	−12.6	100
28	966	−11.0	100
37	954	−10.9	97
58	928	−11.9	93
79	902	−11.9	91
155	818	−16.5	100
228	742	−21.1	89
280	693	−25.2	95
347	631	−29.9	89
395	590	−33.3	88
406	582	−33.0	86
470	529	−37.2	70
517	494	−39.6	70

Moderate ground fog; 5/10 St, W, 360–1,710 m; 5/10 As, W, 2,670–3,530 m.

Feb. 8, 2:40 p. m.

H	P	T	R
14	988	−12.5	85
55	936	−15.0	88
71	916	−14.8	84
126	854	−18.2	92
151	825	−18.7	92
188	788	−20.4	91
247	728	−23.7	88
302	675	−27.6	86
353	628	−31.9	84
404	585	−35.6	83
414	576	−34.7	82
473	529	−37.8	81
511	500	−40.6	81

Light snow at surface; 8/10 St, W (frost), 1,260–2,470 m; 5/10 St, W, from 2,470 m.

Feb. 9, 10:06 a. m.

H	P	T	R
14	990	−19.7	86
20	981	−18.7	85
29	970	−18.7	87
78	906	−21.5	93
88	895	−21.2	93
166	806	−26.2	86
184	787	−26.2	86
190	782	−25.8	86
201	769	−26.4	87
206	764	−26.0	86
214	754	−26.1	86
224	745	−25.3	86
264	706	−26.9	85
273	696	−26.5	85
287	684	−27.0	85
297	673	−27.0	85
358	617	−31.0	82
418	568	−35.1	81
473	524	−38.9	81
506	498	−41.4	80

Light snow at surface; 8/10 St, W, 330–2,620 m; 3/10 Cs, unknown.

Feb. 9, 2:41 p. m.

H	P	T	R
14	988	−17.8	84
44	948	−19.2	85
51	940	−19.2	85
79	906	−20.9	93
85	896	−20.5	93
163	808	−26.3	95
171	799	−25.2	95
192	776	−25.0	95
198	770	−24.2	95
212	756	−24.2	95
242	726	−25.6	94
250	718	−25.2	94
303	668	−28.7	92
356	618	−31.6	88
416	568	−35.3	76
474	522	−39.2	80
514	492	−41.5	73

Light snow at surface; 8/10 St, W, 330–1,520 m; 7/10 St, W, 1,800–1,990 m; 6/10 St, W, 2,160–2,630 m.

Feb. 10, 7:54 a. m.

H	P	T	R
14	981	−37.8	55
28	962	−22.1	66
46	939	−19.7	68
54	928	−19.6	67
64	916	−20.6	68
72	906	−19.8	68
112	858	−21.1	75
123	846	−20.2	73
178	788	−21.8	77
185	780	−20.6	62
223	740	−23.9	66
295	671	−28.8	65
332	637	−29.6	49
410	569	−36.4	50
467	523	−39.4	46
514	489	−42.3	38

1/10 As, unknown, at 4,980 m (estimated); moderate ground fog 8:05–9 a. m.

Feb. 10, 3:23 p. m.

H	P	T	R
14	979	−29.6	87
24	963	−22.7	83
43	939	−22.1	80
51	930	−20.9	79
85	888	−22.3	79
106	864	−20.4	77
149	816	−20.4	70
210	750	−22.9	68
216	744	−22.5	61
230	730	−23.5	60
236	724	−23.4	53
274	686	−26.8	58
293	669	−26.4	69
342	625	−29.5	79
354	614	−29.6	79
369	601	−30.2	76
417	561	−34.7	75
471	520	−38.5	80
512	489	−42.2	81

7/10 St, SW, from 300 m.

Feb. 11, 11:49 a. m.

H	P	T	R
14	982	−22.2	86
82	896	−28.5	90
103	870	−28.8	89
116	854	−28.4	89
129	838	−28.8	89
136	830	−27.8	89
154	810	−27.8	89
171	791	−25.6	89
180	782	−25.8	88
220	740	−28.2	82
232	729	−28.4	84
241	720	−27.1	87
246	714	−27.1	89
256	706	−25.4	92
288	674	−25.9	89
307	657	−27.0	92
315	650	−26.4	91
333	634	−27.8	90
347	622	−27.9	76
413	566	−33.8	59
463	528	−37.6	55
513	490	−42.5	56

7/10 St, W, 270–2,900 m; 2/10 Cs, SE.

Feb. 11, 3:13 p. m.

H	P	T	R
14	982	−23.1	79
57	924	−27.0	78
103	868	−29.0	85
116	852	−29.1	85
126	840	−28.1	85
144	820	−28.1	84
149	814	−27.0	84
162	800	−26.8	84
171	791	−25.6	83
220	738	−28.8	85
228	730	−28.7	85
247	712	−26.0	88
302	659	−27.9	93
314	649	−27.1	91
359	610	−30.5	88
410	566	−35.0	82
465	523	−38.6	63
508	490	−43.0	61

Light snow at surface; 6/10 St, W, 270–3,150 m.

Feb. 12, 8:05 a. m.

H	P	T	R
14	983	−34.2	68
46	946	−25.1	72
67	914	−25.8	74
76	904	−25.7	75
85	892	−25.7	75
128	842	−27.1	80
142	826	−26.5	81
159	808	−26.9	81
172	796	−26.5	81
183	784	−26.8	81
194	772	−26.2	81
213	752	−26.1	80
235	729	−26.9	80
245	720	−26.1	76
255	709	−26.2	78
307	660	−28.7	80
363	610	−32.1	82
428	556	−37.0	81
474	520	−41.6	82
508	494	−45.2	81

Light snow from surface to 2,130 m; 9/10 St, S, 300–2,130 m; 10/10 St, S, 3,630–5,080 m.

Feb. 12, 3:12 p. m.

H	P	T	R
14	984	−26.6	76
24	969	−26.2	76
41	946	−26.0	78
54	930	−26.9	79
61	922	−25.8	81
96	880	−26.8	82
110	864	−25.4	81
146	821	−28.2	88
178	788	−31.0	87
187	778	−27.4	86
228	734	−27.8	83
280	684	−30.0	81
339	628	−33.3	80
348	620	−33.1	79
352	607	−33.9	78
368	602	−33.9	76
426	552	−39.0	75
470	518	−42.9	76
502	494	−46.2	78

Light snow from surface to 1,460 m; 10/10 St, S (⅛ in. smooth, hard, opaque ice), 1,460–1,780 m; few Cs, unknown.

Feb. 13, 7:57 a. m.

H	P	T	R
14	975	−41.9	70
22	962	−27.5	73
45	934	−23.3	70
56	920	−22.9	68
83	889	−24.0	67
86	884	−23.6	66
98	870	−24.0	64
111	855	−22.4	63
120	844	−22.4	58
138	826	−21.0	54
166	795	−21.0	44
235	724	−26.5	44
305	656	−32.2	48
370	598	−37.0	51
430	548	−40.8	50
476	512	−44.6	51
497	497	−45.0	49
511	487	−45.4	50
518	482	−46.3	53

Moderate ground fog.

Feb. 13, 3:15 p. m.

H	P	T	R
14	971	−26.1	83
37	940	−20.8	71
52	920	−20.1	62
70	900	−20.1	56
91	876	−20.9	52
104	860	−18.8	46
135	825	−20.1	40
139	820	−19.4	39
182	775	−22.4	35
193	764	−22.6	35
270	687	−29.7	37
296	662	−30.4	38
302	657	−30.0	37
372	594	−34.5	35
442	538	−39.5	35
476	510	−42.5	36
514	482	−45.3	37

Few Cs, unknown.

Feb. 14, 7:54 a. m.

H	P	T	R
14	959	−26.7	73
19	950	−19.6	70
35	930	−20.5	64
42	920	−19.4	62
89	866	−19.7	56
100	854	−17.8	51
112	840	−18.1	47
126	824	−16.4	44
145	806	−16.6	39
159	790	−15.8	35
168	780	−16.1	33
198	750	−18.1	30
204	744	−18.0	30
301	652	−25.1	27
308	646	−25.0	26
367	595	−29.7	26
420	552	−34.6	27
430	545	−34.0	29
462	521	−35.8	34
530	471	−39.9	44

9/10 As, E, from 3,530 m.

Feb. 14, 3:05 p. m.

H	P	T	R
14	957	−17.6	71
31	935	−15.2	63
56	904	−15.1	65
71	886	−15.7	67
93	864	−17.7	72
103	852	−16.3	73
112	842	−16.5	73
160	792	−19.8	86
216	734	−22.6	90
226	726	−21.4	90
244	709	−20.9	90
264	690	−21.4	84
324	636	−25.8	67
347	616	−26.2	67
398	575	−28.5	74
457	529	−33.7	80
496	500	−37.9	80
532	474	−41.5	80

9/10 St, SE, 280 to 3,980 m; 10/10 As, SE, 3,980—5,320 m; moderate turbulence 3,470–3,980 m; few Cs, unknown; light snow 3:10–5:30 p. m.

Feb. 15, 7:26 a. m.

H	P	T	R
14	968	−25.6	79
22	956	−24.0	79
51	919	−25.6	79
68	900	−24.6	79
78	888	−20.6	81
102	860	−19.7	82
131	828	−20.7	86
158	800	−15.2	79
184	774	−16.0	72
255	704	−21.1	56
337	629	−27.2	55
399	577	−33.0	68
445	540	−36.8	53
477	514	−40.5	55
503	494	−42.6	61

7/10 St, S, at 1,530 m (estimated); moderate turbulences 1,530–1,950 m, and from 3,430 m.

Feb. 15, 3:37 p. m.

H	P	T	R
14	973	−27.5	86
18	966	−25.5	86
71	899	−27.7	90
86	882	−25.8	91
94	872	−24.2	91
110	852	−25.0	92
122	838	−18.4	92
132	828	−19.0	92
142	816	−17.5	91
165	792	−17.6	81
216	738	−21.9	89
267	688	−24.7	74
313	646	−28.3	69
353	610	−32.2	73
365	600	−33.1	73
420	554	−37.4	76
464	520	−41.5	72
502	492	−44.5	61

Moderate turbulence 1,650–3,530 m; 3/10 St, S, at 2,160 m (estimated); 3/10 As, S, 2,340–3,650 m; 9/10 As, S, from 3,650 m.

Feb. 16, 7:45 a. m.

H	P	T	R
14	975	−27.5	89
35	948	−29.9	90
55	922	−28.8	92
71	901	−29.3	93
84	888	−27.9	93
100	868	−27.1	93
108	858	−27.9	94
120	844	−27.0	95
130	832	−24.4	96
142	818	−24.5	98
171	786	−21.2	100
241	718	−25.2	100
248	709	−25.1	100
320	642	−30.7	96
386	584	−36.1	93
471	515	−43.6	90
506	489	−46.6	88
512	485	−46.8	88

10/10 St, SW, 150 to 3,860 m; moderate turbulence from 4,710 m; 10/10 As, from 5,060 m. Light snow at surface.

Feb. 16, 3:09 p. m.

H	P	T	R
14	980	−25.3	82
54	928	−29.8	85
83	892	−29.8	85
93	880	−30.6	86
102	870	−29.3	86
104	866	−29.7	86
117	850	−27.2	87
122	844	−27.2	88
135	828	−26.1	88
156	808	−26.2	90
163	799	−25.3	89
182	778	−24.4	92
212	750	−24.4	91
255	707	−27.0	90
273	690	−27.4	84
322	644	−30.8	66
330	637	−31.7	63
384	590	−36.9	60
434	548	−41.1	70
479	511	−45.2	71
510	489	−48.5	74

10/10 St, SW, 150–1,350 m; 4/10 As, unknown, from 4,770 m.

Feb. 17, 7:34 a. m.

H	P	T	R
14	994	−32.5	76
22	982	−31.7	76
34	964	−31.8	76
74	914	−34.5	81
90	896	−33.3	82
101	880	−33.7	82
115	862	−33.4	84
128	846	−31.7	84
165	804	−33.1	86
186	779	−29.1	84
200	764	−27.0	66
248	714	−28.9	55
295	667	−30.9	76
365	604	−35.5	78
418	559	−39.7	81
466	521	−43.4	80
504	492	−46.9	80

9/10 St, S, 160–1,840 m; 5/10 As, unknown, 2,950–3,640 m.

Feb. 17, 3:10 p. m.

H	P	T	R
14	997	−31.0	76
20	985	−30.5	77
85	902	−33.0	52
112	869	−32.4	85
145	830	−30.1	88
155	820	−30.7	88
173	800	−29.4	89
212	758	−29.4	90
234	736	−29.4	81
289	682	−31.5	70
345	631	−34.3	82
355	621	−33.9	80
418	566	−38.2	67
475	520	−42.7	63
521	486	−46.5	65

2/10 As, unknown.

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H = Height in decameters above sea level. T = Temperature in degree centigrade.
P = Pressure in millibars. R = Relative humidity (percent).

Feb. 18, 3:07 p. m.

H	P	T	R
14	1,000	−31.3	70
26	982	−26.4	70
37	970	−25.7	68
73	924	−25.1	67
78	918	−24.1	66
88	906	−24.4	66
105	886	−24.7	64
111	876	−22.8	62
120	866	−22.7	60
128	855	−22.8	58
171	808	−21.3	41
244	732	−23.6	34
257	719	−22.9	32
334	649	−23.7	27
393	598	−27.3	28
455	548	−30.9	30
493	520	−34.1	31
532	492	−37.2	33

Cloudless.

Feb. 19, 7:42 a. m.

H	P	T	R
14	987	−36.1	84
29	966	−18.5	52
86	896	−16.5	42
93	888	−16.8	40
102	878	−16.8	39
126	850	−11.0	35
139	836	−10.6	30
145	829	−9.4	29
148	824	−8.3	28
157	815	−8.3	27
202	770	−11.1	24
244	728	−14.2	22
314	664	−19.5	20
370	615	−22.5	20
388	602	−22.2	20
450	552	−27.0	22
459	547	−26.5	22
523	500	−29.7	22

8/10 As, SW; moderate turbulence from 930 m.

Feb. 19, 3:12 p. m.

H	P	T	R
14	984	−17.8	64
22	973	−15.9	54
44	944	−15.9	50
50	938	−15.1	50
68	914	−16.7	48
78	904	−16.0	48
92	888	−16.5	49
112	864	−10.2	42
126	848	−9.2	36
133	840	−8.4	37
144	828	−8.4	38
155	818	−9.2	40
203	770	−12.5	53
206	766	−11.4	52
213	759	−11.4	49
275	700	−16.8	62
352	631	−22.2	80
361	623	−21.7	77
410	584	−22.8	70
430	569	−23.7	72
484	527	−27.6	75
528	494	−31.2	81

9/10 As, SW, from 4,300 m; moderate turbulence, 1,550–4,300 m.

Feb. 20, 7:42 a. m.

H	P	T	R
14	983	−31.7	89
28	965	−14.2	65
39	950	−14.5	64
46	942	−13.6	62
54	932	−13.8	61
59	926	−13.0	60
62	922	−13.3	60
71	910	−11.3	59
82	900	−11.1	58
89	891	−11.3	57
110	866	−6.6	52
130	844	−8.0	55
133	840	−7.7	55
189	782	−10.6	62
196	774	−10.1	56
201	770	−10.4	54
208	762	−10.1	50
233	738	−11.0	45
309	668	−16.6	62
316	663	−16.1	61
378	610	−20.3	55
444	558	−26.0	53
487	525	−29.7	52
531	494	−33.2	53

6/10 Cs, SW.

Feb. 20, 3:40 p. m.

H	P	T	R
14	984	−19.3	79
33	961	−11.4	59
56	932	−12.0	57
65	920	−11.8	57
74	910	−10.8	56
94	888	−11.2	56
101	878	−9.3	57
115	862	−8.8	56
121	854	−6.6	53
191	781	−10.7	60
198	772	−10.5	58
218	753	−12.2	57
233	738	−12.2	59
294	682	−17.0	71
307	669	−17.2	62
373	613	−21.6	63
428	568	−26.2	62
477	530	−31.3	69
522	498	−35.2	75

2/10–5/10 As, from 4,210 m.

Feb. 21, 7:39 a. m.

H	P	T	R
14	991	−29.7	80
39	957	−11.6	59
69	920	−11.5	59
74	916	−11.1	59
88	899	−6.6	57
96	890	−5.6	58
107	878	−7.4	61
123	860	−7.2	62
198	782	−10.8	67
262	720	−15.4	66
332	655	−20.4	76
400	597	−26.5	74
472	540	−31.8	63
536	494	−37.1	70

2/10 As, W, 2,740 to 4,200 m; moderate turbulence 570–1,580 m.

Feb. 21, 3:42 p. m.

H	P	T	R
14	996	−19.2	86
37	965	−13.1	70
66	930	−13.8	70
84	908	−8.3	66
97	894	−7.6	76
111	878	−7.8	83
151	834	−11.0	100
193	790	−13.8	100
210	772	−14.0	94
268	715	−18.6	95
331	656	−22.8	86
404	593	−28.9	82
464	546	−34.1	83
523	502	−39.1	83

1/10 St, SW, at 1,510 m (estimated); 3/10 St, SW, from 2,180 m.

Feb. 22, 7:30 a. m.

H	P	T	R
14	1,008	−25.8	88
31	985	−15.9	80
45	966	−16.0	80
64	940	−14.0	80
85	916	−11.1	100
99	900	−10.6	100
163	828	−12.2	100
167	824	−12.0	99
218	771	−14.9	75
229	760	−14.9	57
260	730	−17.4	47
296	696	−19.9	79
367	631	−25.7	89
442	568	−33.2	85
455	558	−33.2	85
521	508	−38.6	82

5/10 St, SE, at 640 m (estimated); 6/10 St, SE, 2,420–3,980 m.

Feb. 22, 3:42 p. m.

H	P	T	R
14	1,012	−15.0	89
21	1,002	−15.7	94
30	992	−15.0	97
52	962	−14.8	98
58	955	−13.8	98
68	942	−13.5	99
76	932	−12.4	99
86	922	−12.2	100
89	918	−11.7	100
98	908	−11.6	100
104	900	−10.5	100
153	844	−12.0	98
168	828	−12.0	77
185	810	−13.4	85
190	804	−13.2	66
214	778	−14.3	77
226	766	−14.4	51
273	718	−17.2	45
337	661	−22.3	54
386	617	−26.7	78
394	610	−26.6	80
404	601	−27.4	81
468	550	−32.8	82
523	510	−37.0	81

Light snow at surface; 9/10 St, SE, 300–860 m; 5/10 As, unknown, 3,860–4,040 m.

Feb. 23, 7:12 a. m.

H	P	T	R
14	1,011	−17.6	100
18	1,006	−15.0	100
31	989	−13.8	97
51	963	−14.9	100
63	948	−14.4	100
73	936	−13.2	100
96	908	−13.3	97
121	878	−15.3	100
131	870	−15.0	100
139	860	−15.9	100
155	842	−15.9	100
163	834	−15.4	100
167	828	−15.5	100
223	770	−19.8	100
232	762	−19.8	100
246	748	−19.2	98
276	718	−21.7	98
286	709	−21.2	66
295	700	−21.5	52
354	643	−25.7	58
385	618	−26.8	71
444	570	−31.4	76
488	536	−35.1	75
525	508	−38.2	78

Light snow at surface; 10/10 St, NE (frost) 1,390–2,720 m; 3/10 As, E, 3,360–3,800 m; moderate turbulence 2,460–3,020 m.

Feb. 23, 3:34 p. m.

H	P	T	R
14	1,006	−13.9	97
33	980	−12.0	84
56	952	−12.6	84
89	911	−14.8	90
123	872	−15.7	86
142	852	−15.4	78
155	838	−16.0	77
166	825	−15.8	75
200	789	−16.8	75
281	708	−21.4	77
286	704	−21.0	75
291	699	−20.9	74
335	658	−23.3	62
344	651	−23.3	58
408	596	−28.5	61
465	550	−33.1	56
519	510	−36.4	48

2/10 St, E, 1,570–3,300 m.

Feb. 24, 7:07 a. m.

H	P	T	R
14	996	−21.1	86
29	976	−13.6	86
57	939	−14.3	88
88	902	−13.9	85
174	806	−17.6	97
183	798	−16.4	95
199	780	−16.9	93
207	772	−16.7	93
280	700	−21.8	95
309	673	−21.2	95
313	669	−21.5	95
330	655	−23.3	93
337	648	−20.4	95
346	640	−19.9	94
361	626	−19.4	62
410	586	−21.6	67
464	545	−24.6	71
512	510	−26.8	60

5/10 St, E, 570–2,460 m; 9/10 As, E, 3,130 to 3,370 m; moderate turbulence 3,090–3,460 m; 1/10 Cs, unknown.

Feb. 24, 3:36 p. m.

H	P	T	R
14	993	−16.4	85
34	966	−19.1	91
40	959	−16.0	89
52	944	−15.2	82
63	930	−14.9	80
98	889	−15.7	79
106	880	−14.6	79
167	812	−19.2	100
201	777	−21.2	100
222	756	−13.7	75
248	730	−12.4	62
319	666	−17.5	69
411	588	−24.5	89
473	539	−27.7	80
511	512	−30.1	77

10/10 St, E, 1,670–2,010m; 5/10 As, unknown, from 4,060 m; moderate turbulence, 3,190–4,110 m.

Feb. 25, 7:05 a. m.

H	P	T	R
14	994	−15.0	90
50	946	−17.8	97
66	926	−16.4	90
81	910	−16.8	90
110	876	−15.7	93
120	862	−12.9	95
135	848	−12.6	98
148	834	−12.5	100
164	816	−14.0	100
174	805	−14.5	100
188	792	−14.0	100
197	782	−13.9	90
205	774	−13.9	86
246	734	−15.2	66
255	724	−14.8	48
293	690	−16.7	50
300	682	−16.2	53
363	627	−21.6	65
421	580	−26.1	75
477	536	−29.5	82
516	508	−32.4	82

7/10 St, E, 1,640 to 1,880 m; 5/10 As, unknown, from 3,880 m; moderate turbulences 1,970–2,460 m, 3,630–4,770 m, and strong turbulence from 4,770 m.

Feb. 25, 3:52 p. m.

H	P	T	R
14	996	−15.7	90
18	990	−15.2	89
69	924	−19.0	100
84	906	−18.0	100
102	882	−17.8	100
126	856	−12.4	87
172	805	−14.0	85
182	796	−13.3	75
188	790	−13.4	75
234	744	−16.8	92
242	735	−16.8	67
265	713	−18.1	62
285	696	−18.1	46
293	688	−17.6	46
314	668	−19.5	43
337	649	−21.6	51
344	643	−20.9	62
401	594	−25.1	86
449	556	−29.2	93
478	534	−30.3	91
519	504	−33.6	93

3/10 St, SE, 860–1,580 m; 9/10 As, SW, and moderate turbulence from 3,140 m.

Feb. 26, 7:17 a. m.

H	P	T	R
14	998	−18.1	91
36	968	−16.7	97
44	957	−16.8	98
78	915	−17.9	95
125	862	−13.0	93
134	852	−13.0	93
146	838	−13.4	85
152	832	−13.0	80
161	822	−13.0	76
241	742	−17.6	93
247	736	−17.6	93
318	670	−22.0	89
386	610	−25.4	86
466	548	−31.8	82
527	500	−36.4	82

3/10 St, SW, at 4,20 m; (estimated); 6/10 St, SW, from 2,340 m.

Feb. 26, 4:04 p. m.

H	P	T	R
14	996	−16.0	91
17	991	−13.9	87
32	973	−13.9	82
44	956	−14.6	82
59	939	−14.5	86
76	920	−12.5	88
92	901	−13.4	86
102	888	−13.6	87
122	866	−11.9	79
134	854	−12.3	78
142	844	−12.1	69
198	785	−15.0	57
250	732	−18.3	56
310	676	−21.7	41
328	660	−22.1	40
394	603	−26.4	53
449	559	−30.8	59
465	547	−32.1	61
474	540	−32.0	60
517	508	−34.6	55

Few As, SW, at 3,010 m (estimated); moderate turbulence from 4,490 m.

Feb. 27, 7:22 a. m.

H	P	T	R
14	998	−18.4	100
29	978	−19.5	100
37	968	−18.5	100
44	959	−18.5	100
59	939	−15.7	100
76	918	−15.8	100
78	914	−15.0	100
90	900	−15.0	100
102	886	−15.9	100
126	858	−13.1	100
172	808	−15.3	100
231	748	−17.4	100
242	738	−17.4	100
288	722	−15.9	100
315	699	−20.4	100
322	663	−20.4	100
351	637	−22.3	90
434	568	−29.9	100
522	502	−36.4	75

Light snow at surface; 9/10 St, W, 160–3,020 m; 5/10 As, unknown, 3,040–4,640 m; strong turbulence from 4,340 m.

Feb. 27, 4:05 p. m.

H	P	T	R
14	1,004	−17.9	97
18	998	−16.7	95
32	979	−16.6	98
51	955	−17.0	100
71	930	−18.4	100
120	872	−19.4	100
144	846	−17.2	100
175	812	−15.7	100
211	774	−17.2	100
237	748	−17.7	89
279	707	−20.6	98
291	695	−20.7	97
319	669	−22.9	100
352	639	−25.5	100
357	635	−24.2	100
364	630	−24.5	99
403	597	−27.1	97
469	545	−32.0	94
517	510	−35.9	94

Light snow at surface; 9/10 St, W (frost), 1,440–3,520 m; moderate turbulence, 3,190–3,640 m.

Feb. 28, 7:23 a. m.

H	P	T	R
14	1,011	−24.3	100
21	1,002	−17.8	100
28	994	−17.3	100
58	955	−16.9	100
67	944	−17.3	100
80	929	−17.2	100
110	892	−18.8	100
132	868	−18.4	100
148	848	−18.8	100
188	805	−18.5	100
227	764	−19.6	100
296	697	−23.7	100
324	671	−23.7	100
386	615	−27.1	95
446	566	−30.9	82
508	520	−35.0	71

6/10 St, W, 280–700 m; 4/10 St, W, 1,840–3,990 m; light snow 7:45–8:10 a. m.

Feb. 28, 3:55 p. m.

H	P	T	R
14	1,012	−12.9	97
85	920	−19.4	100
94	910	−18.5	100
109	892	−18.4	100
116	884	−18.4	100
131	868	−18.9	100
143	854	−18.5	100
152	844	−18.5	100
160	834	−18.7	100
167	825	−18.5	100
176	816	−18.8	100
187	804	−19.1	100
202	788	−19.8	100
208	782	−19.4	100
234	756	−20.3	100
270	720	−22.6	100
274	715	−22.4	100
302	689	−22.4	100
352	643	−25.8	100
418	587	−29.4	83
464	550	−32.9	71
504	520	−36.3	65

8/10 St, W, 1,870–2,020 m; 3/10 As, unknown, from 3,820 m.

Mar. 1, 7:19 a. m.

H	P	T	R
14	1,010	−19.2	93
26	994	−15.2	92
57	952	−16.8	100
94	908	−17.0	99
103	896	−16.4	99
125	870	−16.7	99
136	858	−17.3	100
140	854	−17.0	100
164	828	−18.5	100
189	800	−20.4	100
193	796	−18.4	100
211	776	−18.5	100
262	724	−20.9	99
309	680	−23.8	99
321	668	−22.8	98
380	616	−26.1	94
416	587	−26.9	79
505	518	−33.7	59

8/10 St, SW, (1/8 in. smooth, opaque, hard ice) 1,640–1,890 m; 4/10 As, unknown, 2,770–3,170 m; moderate turbulence, 1,400–1,890 m.

Mar. 1, 3:47 p. m.

H	P	T	R
14	1,007	−13.9	82
18	998	−13.1	82
24	990	−13.1	83
70	932	−13.8	89
82	920	−13.3	87
131	861	−18.5	100
161	828	−18.8	100
176	812	−19.6	100
187	800	−18.6	100
193	794	−18.6	100
198	788	−19.1	100
214	770	−19.4	100
284	704	−25.0	100
294	693	−22.2	74
310	678	−22.2	68
372	624	−25.3	78
442	567	−29.8	78
507	517	−35.2	83

2/10 St, unknown, 2,120–3,200 m.

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H=Height in decameters above sea level. P=Pressure in millibars. T=Temperature in degree centigrade. R=Relative humidity (percent).

H	P	T	R
Mar. 2, 7:10 a. m.			
14	1,002	−30.6	86
33	977	−16.0	74
47	959	−16.3	70
63	939	−15.9	70
123	866	−20.2	87
138	850	−19.0	82
143	844	−17.0	74
153	834	−16.2	64
160	826	−16.1	55
187	797	−17.8	46
199	786	−16.8	41
216	770	−16.7	39
234	752	−18.3	44
252	734	−18.3	49
326	664	−21.5	39
398	603	−26.1	33
461	552	−31.2	40
510	516	−34.0	40
Light ground fog; few St, unknown.			
Mar. 2, 4:10 p. m.			
14	997	−16.1	69
19	989	−14.3	67
42	960	−14.5	64
118	868	−17.9	68
122	862	−16.9	69
138	846	−17.0	69
155	828	−18.4	70
171	810	−16.9	69
189	792	−16.9	69
195	786	−16.6	68
256	724	−18.8	61
344	643	−23.4	43
430	571	−29.1	40
512	510	−34.4	39
Few St, unknown, 1,580–1,860 m; 2/10 As, unknown, from 3,600 m; moderate turbulence from 4,300 m.			
Mar. 3, 7:26 a. m.			
14	995	−31.4	73
28	978	−19.2	70
31	972	−19.4	69
36	966	−18.2	68
43	957	−18.2	67
49	949	−17.7	66
73	918	−17.6	66
124	856	−21.3	85
128	854	−21.3	85
133	848	−20.3	84
141	838	−20.0	82
150	828	−19.0	80
171	805	−19.0	79
181	794	−18.5	63
248	726	−21.2	53
255	720	−21.1	51
315	664	−24.4	50
378	609	−28.5	58
441	558	−31.1	48
506	510	−35.0	44
Few St, unknown.			
Mar. 3, 4:17 p. m.			
14	993	−17.6	54
17	989	−14.7	54
26	978	−14.8	54
71	920	−17.9	56
117	868	−20.4	60
156	824	−20.4	65
168	812	−20.6	67
184	796	−20.2	69
201	778	−20.4	70
212	766	−19.8	67
232	748	−20.4	64
306	676	−24.6	59
369	620	−28.3	60
430	569	−31.7	59
472	536	−34.4	55
508	510	−36.6	52
Moderate turbulence, 2,320–3,060 m; cloudless.			
Mar. 4, 6:51 a. m.			
14	993	−36.4	64
20	984	−20.4	65
26	975	−20.2	65
39	959	−20.0	64
55	939	−18.2	64
59	934	−17.7	64
73	916	−18.1	65
133	846	−23.5	87
141	836	−22.5	87
180	795	−18.7	80
206	768	−18.2	72
244	730	−20.5	82
276	699	−21.3	65
359	623	−27.0	47
367	616	−27.0	42
444	554	−30.9	38
477	528	−31.3	36
498	514	−32.6	35
8/10 St, SE, 1,330 to 1,410 m.			
Mar. 4, 4:05 p. m.			
14	993	−20.6	57
41	957	−18.5	58
64	928	−18.8	58
84	904	−20.4	62
94	894	−20.4	65
100	886	−20.5	65
139	840	−24.3	73
153	824	−25.2	76
186	790	−18.6	82
190	784	−18.4	79
208	766	−19.4	75
223	751	−19.5	74
241	734	−20.6	71
250	726	−20.5	67
298	680	−22.9	60
344	638	−24.0	47
398	593	−25.8	41
452	550	−29.7	39
462	543	−29.5	38
517	502	−32.5	36
9/10 St, SE, 1,390–1,530 m; moderate turbulence, 1,000–1,860 m.			
Mar. 5, 6:44 a. m.			
14	990	−22.0	72
18	985	−21.3	72
37	960	−21.7	72
56	936	−21.3	73
64	927	−19.0	73
74	912	−19.0	76
118	860	−22.7	88
124	854	−23.3	90
150	824	−25.2	94
171	801	−14.4	62
186	786	−13.9	49
209	762	−15.7	46
217	756	−15.6	43
250	722	−17.6	36
260	712	−17.9	34
292	682	−19.9	31
316	660	−20.4	28
375	608	−24.3	27
426	568	−27.5	26
469	535	−30.0	25
502	510	−32.7	25
9/10 St, SE, 1,240–1,500 m; moderate turbulence, 1,180–2,920 m.			
Mar. 5, 4:07 p. m.			
14	991	−18.5	73
26	976	−19.0	76
35	965	−19.1	76
61	930	−20.4	79
71	918	−19.7	79
94	892	−20.1	79
102	882	−19.4	82
114	868	−19.9	86
125	854	−20.5	92
165	810	−23.3	96
197	767	−11.9	64
244	730	−14.5	73
257	718	−14.2	45
346	638	−20.3	31
360	626	−20.3	30
425	574	−25.4	27
469	539	−28.2	27
508	510	−30.8	27
9/10 St, SE, 1,250–1,650 m; strong turbulence, 1,140–1,650 m; snow flurries began 4:55 p. m. continued.			
Mar. 6, 6:43 a. m.			
14	998	−20.7	76
50	949	−22.4	84
91	898	−22.4	89
134	849	−20.4	97
143	838	−19.9	99
161	820	−21.2	98
167	812	−20.4	100
175	804	−10.2	88
190	788	−8.9	74
270	712	−14.5	87
342	647	−19.9	90
398	599	−24.2	92
449	558	−27.5	94
463	547	−27.2	90
476	536	−28.0	85
486	529	−28.0	81
508	514	−30.3	79
Snow flurries at surface; 10/10 St, SE, 1,340–1,670 m; 7/10 St, unknown, from 2,440 m.			
Mar. 6, 4:21 p. m.			
14	1,000	−19.4	77
98	892	−23.7	85
110	876	−22.0	92
117	868	−22.3	97
132	850	−18.9	99
137	844	−18.8	100
172	806	−10.1	79
188	790	−11.0	78
208	771	−11.2	67
271	710	−16.1	87
275	706	−15.9	85
321	664	−20.2	94
332	654	−20.2	89
356	633	−20.7	82
434	570	−26.4	73
440	566	−26.1	72
498	521	−30.4	76
514	510	−31.0	76
9/10 St, SE, 1,100–1,170 m; 3/10 As, unknown, 3,420–3,660 m.			
Mar. 7, 6:49 a. m.			
14	996	−24.3	89
35	969	−22.1	90
65	930	−22.4	88
121	862	−14.2	100
133	850	−14.4	100
143	840	−12.5	97
162	818	−5.0	61
173	806	−4.8	62
242	739	−10.5	66
277	706	−13.9	81
333	656	−17.4	57
402	600	−21.5	55
467	547	−28.1	73
531	500	−33.6	77
Snow flurries ended 7:10 a. m.; 3/10 St, S, 890–1300 m; 6/10 St, S, 1330–1430 m; 5/10 As, unknown, from 4670 m; Strong turbulence, 1210–3330 m.			
Mar. 7, 4:03 p. m.			
14	993	−18.3	67
28	976	−19.9	69
36	963	−19.4	70
48	946	−19.4	70
64	927	−17.6	72
76	912	−17.6	77
90	896	−15.9	84
115	868	−8.0	64
135	846	−3.4	57
161	818	−4.9	54
194	786	−8.0	58
231	748	−10.9	62
280	702	−14.5	67
349	640	−20.3	67
360	631	−21.3	70
422	580	−26.6	80
464	546	−30.8	81
500	520	−33.9	81
508	514	−33.7	79
518	506	−35.0	78
7/10 As, S, from 3,600 m; strong turbulence, 760–1,610 m, and moderate turbulence, 3,490–4,220 m.			
Mar. 8, 6:49 a. m.			
14	997	−29.4	86
20	988	−22.7	85
25	982	−23.0	85
32	974	−22.0	85
42	960	−22.4	88
71	922	−20.7	87
88	902	−18.0	90
100	888	−6.7	82
115	870	−5.8	75
128	856	−5.8	69
140	844	−6.5	68
152	830	−6.3	65
206	774	−10.4	65
278	705	−16.1	81
350	641	−21.5	75
419	583	−26.6	66
470	544	−30.8	56
527	502	−35.8	56
Light ground fog; 2/10 St, unknown, 1,000–1,150 m.			
Mar. 8, 4:12 p. m.			
14	998	−16.8	72
51	949	−19.5	80
57	941	−19.2	85
61	934	−19.6	87
84	906	−15.7	96
110	878	−6.7	96
120	866	−5.8	76
193	790	−11.2	91
201	782	−11.2	84
248	736	−13.6	74
300	687	−17.8	66
349	644	−21.6	70
393	606	−25.2	66
403	599	−25.2	62
428	578	−26.6	54
439	570	−26.4	49
478	539	−29.2	43
510	516	−32.0	43
518	510	−31.7	43
7/10 St, E, 570–840 m.			
Mar. 9, 6:52 a. m.			
14	998	−21.6	89
24	985	−23.3	91
60	939	−20.6	100
83	911	−20.9	100
113	877	−11.4	100
140	847	−9.1	100
195	788	−10.2	95
226	757	−12.5	100
278	707	−15.8	100
344	648	−21.1	99
391	608	−24.7	96
398	603	−23.9	95
427	578	−24.6	65
455	556	−26.5	52
464	549	−26.2	47
485	534	−27.1	47
520	508	−28.5	38
Snow flurries at surface; 10/10 St, S, (1/16 in. smooth, hard, opaque ice), 600 to 1,130 m; 10/10 St, unknown (1/16 in. smooth, hard, opaque ice), 2,260–3,910 m; Moderate turbulence, 2,780 3,910 m.			
Mar. 9, 4:30 p. m.			
14	998	−16.0	89
39	965	−17.7	91
55	946	−17.7	92
70	926	−18.5	94
84	910	−18.4	96
130	856	−8.3	100
148	836	−7.2	98
196	786	−9.3	100
247	736	−11.6	99
315	673	−14.8	99
370	625	−19.2	100
390	608	−19.1	60
425	580	−21.4	47
441	568	−21.4	45
520	510	−26.9	72
Snow flurries at surface; 6/10 St, SE, 720–3, 180 m.			
Mar. 10, 6:47 a. m.			
14	994	−26.7	78
30	972	−13.9	77
39	962	−13.9	78
71	923	−6.2	79
94	898	−6.4	84
130	858	−1.6	67
149	837	−2.7	64
153	833	−2.6	63
171	813	−4.0	61
188	797	−4.2	57
252	734	−9.4	48
296	694	−12.8	69
354	642	−17.1	70
406	600	−20.7	75
464	553	−24.5	63
530	504	−30.2	58
6/10 As, SW, from 4,260 m; light ground fog began 7:30 a. m. continued.			
Mar. 10, 4:13 p. m.			
14	991	−7.2	67
47	950	1.5	59
62	932	1.5	57
110	879	−2.2	67
125	862	−2.8	70
140	846	−0.7	58
157	827	−1.7	52
161	823	−1.7	51
187	798	−3.4	49
247	738	−8.3	46
305	686	−13.1	52
354	634	−17.9	57
423	586	−23.1	65
435	576	−23.6	65
492	533	−28.1	65
528	506	−31.1	63
9/10 As, SW, from 4,350 m; moderate turbulence, 1,100–1,870 m.			
Mar. 11, 6:42 a. m.			
14	995	−15.6	99
20	986	−14.7	100
36	968	−2.8	77
56	941	1.2	73
63	934	1.2	71
102	888	−2.2	76
126	862	−3.0	74
143	844	−2.4	67
206	779	−5.6	70
265	721	−10.9	80
330	663	−16.3	93
338	656	−16.7	93
389	613	−20.6	95
419	584	−23.7	93
500	526	−28.5	99
524	508	−30.4	96
6/10 As, S, 2,620–4,490 m; strong turbulence, 2,060–3,300 m.			
Mar. 11, 4:25 p. m.			
14	997	−7.2	67
35	971	1.5	63
41	963	1.7	60
50	952	3.3	56
56	946	3.3	55
103	893	1.1	57
112	883	1.8	51
131	863	1.5	44
186	805	−3.1	44
245	748	−7.5	46
301	696	−12.5	49
357	647	−16.9	49
412	601	−22.1	56
463	561	−26.6	55
521	518	−31.4	68
541	504	−33.0	70
2/10 St, unknown, at 1,580 m. (estimated); 7/10 As, SW, from 5,210 m.			
Mar. 12, 6:30 a. m.			
14	998	−18.1	100
31	976	0.0	65
49	954	3.3	55
84	914	0.6	57
92	906	1.1	54
130	864	0.7	47
194	796	−5.3	57
257	735	−10.2	70
268	725	−10.4	70
344	656	−16.6	64
360	643	−16.9	64
419	595	−20.7	59
482	546	−24.7	42
533	510	−27.3	33
2/10 Cs, unknown; light ground fog began 6:50 a. m. continued.			
Mar. 12, 4:33 p. m.			
14	994	−2.0	70
22	983	4.0	60
36	967	4.6	53
53	945	3.7	49
122	866	−1.7	64
128	861	−1.6	62
189	798	−5.0	62
247	742	−8.5	55
308	685	−13.0	61
363	637	−16.7	64
415	594	−19.5	51
476	547	−22.9	41
489	538	−22.4	38
526	511	−24.2	30
1/10 As, unknown, at 4069, m. (estimated).			

TABLE 1.—*Free-air data for significant levels obtained by means of airplane soundings, winter 1936–37*—Continued

[Times are for 150th meridian]

H=Height in decameters above sea level. P=Pressure in millibars. T=Temperature in degree centigrade. R=Relative humidity (percent).

H	P	T	R
Mar. 13, 6:41 a. m.			
14	988	−18.0	100
21	977	−1.3	75
28	970	−1.2	66
40	954	2.4	58
99	887	−2.1	67
106	878	−2.1	67
109	874	−0.5	64
122	860	0.1	59
135	847	−0.8	59
141	841	−0.5	57
198	783	−4.5	59
255	727	−7.7	57
324	665	−13.3	66
393	609	−18.0	65
462	555	−22.5	65
530	506	−27.1	50
Few As, unknown.			
Mar. 13, 4:14 p. m.			
14	981	3.0	65
16	978	5.2	57
96	886	−1.6	64
106	876	−1.7	65
115	866	−0.8	64
135	843	−1.7	60
146	833	−2.4	60
154	824	−1.8	59
182	796	−2.9	57
249	731	−8.2	59
309	677	−12.7	60
367	627	−17.4	64
428	578	−21.9	74
440	569	−22.7	73
447	563	−22.4	65
493	529	−25.5	54
538	498	−28.5	60
Few As, SE.			
Mar. 14, 6:51 a. m.			
14	978	−16.5	100
15	975	−0.8	71
32	956	1.5	64
37	948	1.5	60
74	905	−0.6	62
80	900	1.0	61
84	895	1.0	57
98	880	0.7	54
105	872	0.7	52
165	809	−3.2	51
216	758	−8.1	56
280	699	−13.1	64
342	644	−18.6	81
370	620	−19.7	78
434	568	−22.5	67
486	528	−27.3	64
500	518	−27.1	62
514	508	−28.9	60
524	501	−28.4	56
527	498	−28.4	57
2/10 As, S, from 4,040 m.; 5/10 Cs, SW; Moderate turbulence 2,800–3,700 m, and strong turbulence, 4,340–5,240 m.			
Mar. 14, 4:09 p. m.			
14	975	0.7	65
24	963	4.6	56
99	878	0.1	54
161	813	−4.3	58
217	757	−9.6	63
273	703	−14.4	72
340	644	−19.6	89
358	628	−20.4	88
394	599	−23.5	90
459	547	−28.2	94
488	526	−28.4	90
526	498	−30.9	84
6/10 St., S, 2,860–4,960 m; 5/10 Cs, SW.			
Mar. 15, 6:48 a. m.			
14	976	−11.2	100
17	971	0.1	70
24	962	2.7	57
53	896	−1.6	67
90	886	0.1	60
96	879	0.1	54
147	824	−4.1	50
204	767	−8.8	55
262	712	−14.1	63
319	660	−18.0	63
371	614	−22.7	60
431	566	−27.6	64
454	548	−27.6	60
522	498	−33.5	58
8/10 Cs, SW.			
Mar. 15, 4:17 p. m.			
14	974	3.5	64
17	969	6.3	55
22	964	6.4	52
35	948	5.6	49
87	891	1.5	53
130	844	−1.7	57
196	776	−5.4	62
258	717	−11.3	69
313	667	−15.8	68
369	619	−20.7	76
434	568	−25.3	80
486	528	−28.2	79
542	488	−31.8	82
7/10 As, S, 2,420–4,000 m; 1/10 Cs, SW.			

TABLE 2.—*Free-air data for significant levels obtained by means of airplane and radiosonde observations*

WINTER 1937-38.

[Times are for 150th meridian]

H=Height in decameters above sea level. P=Pressure in millibars. T=Temperature in degree centigrade. R=Relative humidity (percent)

* Airplane observation
# Radiosonde observation

H	P	T	R
***Sept. 16, 8:24 a. m.**			
14	976	12.8	62
15	974	13.3	61
23	966	13.3	59
51	934	11.6	58
58	924	12.4	51
79	902	10.7	51
102	878	9.8	51
120	858	9.2	51
187	792	2.9	63
245	735	−1.7	81
328	662	−8.3	91
396	606	−12.6	86
471	549	−17.3	98
527	510	−18.4	97
3/10 Sc, SW, at 2,130m (estimated); 10/10 As, SW, from 3,280 m; moderate turbulence from 1,020 m; light rain, 9.40 to 10:20 a. m. at surface.			
***Sept. 18, 8:23 a. m.**			
14	985	9.0	66
46	946	5.7	81
62	929	7.3	61
74	916	5.9	61
78	911	7.4	59
145	838	2.1	66
154	829	2.1	65
165	817	0.0	72
177	805	0.1	69
235	749	−5.2	78
285	703	−8.8	80
293	697	−8.6	78
337	657	−12.5	86
389	613	−16.4	99
451	564	−20.4	100
498	528	−24.3	99
Ice crystals from 3,370 m; 4/10 Ac, NW, from 4,320 m			
***Sept. 21, 8:18 a. m.**			
14	1,004	1.8	95
37	975	4.5	85
48	961	4.2	86
54	954	4.5	78
64	944	5.9	63
118	882	2.0	69
165	832	−1.5	58
215	782	−5.3	100
246	751	−7.8	80
292	707	−12.2	100
310	691	−13.4	100
317	685	−10.8	60
327	676	−10.6	48
394	620	−14.9	56
427	593	−16.4	56
474	557	−19.7	49
516	526	−23.2	49
10/10 Ac, W, 2,920–3,100 m.			
***Sept. 24, 8:15 a. m.**			
14	995	7.8	80
20	987	8.5	72
46	956	8.3	71
102	893	4.0	82
164	827	−0.7	99
182	809	−0.7	99
220	770	−3.6	100
288	706	−7.4	99
294	702	−7.0	97
309	687	−7.6	99
354	649	−10.6	100
365	639	−10.6	100
422	595	−13.4	97
474	555	−16.6	95
523	520	−19.8	92
Light rain at surface 8:10-9:50 a. m. 10/10 As, SW, from 2,200 m; light rain to 2,200 m, and moderate snow from 2,200 m.			
***Sept. 27, 9:44 a. m.**			
14	1,017	4.5	90
86	930	−0.7	100
100	914	−0.6	100
121	890	−0.6	84
159	848	−3.6	93
184	822	−0.6	70
194	812	−0.6	63
286	722	−8.0	83
314	696	−8.2	64
387	634	−12.8	53
446	587	−17.5	48
522	529	−23.5	43
10/10 St, SW, 320–1,000 m; 5/10 St, unknown, at 1,810 m (estimated).			
***Sept. 30, 8:56 a. m.**			
14	1,011	−1.0	100
44	972	0.5	84
77	934	0.7	68
143	860	−2.0	64
154	848	0.2	51
178	823	0.2	42
228	772	−2.0	32
278	724	−4.6	23
343	667	−8.9	19
399	620	−12.4	17
465	569	−13.2	15
501	543	−12.7	40
Dense ground fog to 250 m; cloudless.			
***Oct. 3, 8:43 a. m.**			
14	997	3.6	97
46	957	2.7	100
129	864	1.2	100
144	848	0.3	100
198	793	−0.2	100
266	727	−3.3	100
339	662	−8.3	93
412	603	−12.6	89
425	593	−13.6	89
440	581	−14.4	87
464	563	−15.3	86
518	524	−19.8	82
10/10 St, NE (3/8 in. rime from 2,330–3,390 m) 460–3,390 m; light rain from surface to 3,650 m, and heavy snow, 3,650–4,250 m; 10/10 St, unknown (1/4 in. rime 4,640–5,110 m) from 4,120 m.			
***Oct. 7, 8:51 a. m.**			
14	1,003	−0.2	80
87	914	−1.9	94
115	881	−1.9	73
152	842	−4.4	72
169	822	−4.4	69
224	768	−7.4	78
236	755	−7.8	66
244	747	−6.8	45
307	688	−9.2	33
388	619	−14.2	26
468	557	−19.0	22
523	518	−23.9	21
2/10 As.			
***Oct. 9, 8:41 a. m.**			
14	1,008	−4.0	100
30	986	−1.9	68
89	916	−2.9	59
115	886	−4.1	57
120	880	−4.1	57
127	873	−3.1	56
133	865	−3.8	53
144	854	−2.3	52
175	822	−3.0	44
252	744	−7.2	38
328	676	−11.6	29
393	619	−13.8	24
451	574	−17.2	25
501	537	−20.6	26
4/10 Cs, S; 3/10 As, SE.			
#Oct. 9, 10:23 a. m.			
14	1,008	0.0	56
74	934	−5.4	69
117	884	−6.6	67
133	866	−5.6	64
154	844	−4.2	62
210	784	−6.0	57
233	760	−7.4	56
302	698	−8.2	52
356	650	−9.2	48
383	627	−11.4	47
412	604	−12.6	47
3/10 AS, SE.			
#Oct. 10, 10:43 a. m.			
14	1,004	2.1	43
160	838	5.0	95
320	685	−6.6	12
409	610	−12.8	15
462	570	−15.0	16
496	545	−17.0	20
560	506	−20.4	22
Cloudless.			
***Oct. 12, 8:31 a. m.**			
14	991	0.5	82
38	961	4.7	60
73	921	4.0	59
112	878	5.0	56
121	868	5.9	55
135	853	5.4	52
156	832	6.9	48
169	818	6.3	45
186	802	6.8	40
200	789	5.9	50
206	783	5.9	50
280	714	0.4	41
355	649	−4.6	39
438	584	−11.5	42
493	544	−16.2	47
526	520	−18.3	51
3/10 As, SE; 4/10 Cs, S.			
#Oct. 12, 9:59 a. m.			
14	990	3.3	57
38	960	5.4	61
99	892	2.0	63
224	764	5.0	60
302	694	−1.1	59
336	664	−4.8	55
386	624	−7.8	53
424	594	−10.2	53
3/10As, SE.			

TABLE 2.—*Free-air data for significant levels obtained by means of airplane and radiosonde observations*—Continued

WINTER 1937-38.

[Times are for 150th meridian]

H=Height in decameters above sea level. T=Temperature in degree centigrade.
P=Pressure in millibars. R=Relative humidity (percent).

* Airplane observation.
# Radiosonde observation.

#Oct. 13, 8:16 a. m.

H	P	T	R
14	988	−1.7	90
48	946	−0.6	79
245	741	2.1	56
259	727	0.1	57
287	703	−1.8	49
316	677	−2.0	46

2/10 As, S; 2/10 Cl, SW.

*Oct. 15, 8:28 a. m.

H	P	T	R
14	985	1.0	93
23	975	4.0	73
57	933	2.4	75
87	899	3.1	75
115	868	1.8	77
126	857	1.8	76
134	850	3.1	64
144	838	3.1	54
201	781	−0.5	50
249	734	−4.6	57
307	682	−9.0	69
336	656	−10.7	63
428	581	−17.9	72
466	552	−20.6	65
516	516	−24.2	59

Few Cl, unknown.

#Oct. 15, 10:04 a. m.

H	P	T	R
14	984	4.4	68
83	906	6.5	52
95	891	4.5	49
190	792	−4.7	49
218	764	−7.7	43
241	742	−9.1	44

Few Ci, unknown.

#Oct. 16, 8:51 a. m.

H	P	T	R
14	976	0.0	83
54	938	0.6	87
82	896	−2.2	75
108	867	0.6	86
214	758	−8.4	88

10/10 St, S.

#Oct. 17, 8:59 a. m.

H	P	T	R
14	980	−0.1	93
124	854	−2.7	100
156	819	−2.7	99
193	783	1.4	100
244	734	−6.0	100

10/10 St, NE.

*Oct. 18, 8:39 a. m.

H	P	T	R
14	981	0.0	100
48	939	−0.8	82
88	893	−2.6	100
124	854	−3.3	100
128	849	−3.3	100
135	842	−2.4	98
147	829	−2.4	93
157	818	−2.1	86
215	760	−6.3	100
253	725	−8.6	89
326	659	−15.2	94
334	653	−15.9	99
379	614	−18.9	94
386	608	−18.1	71
394	602	−17.4	56
406	593	−17.4	51
425	578	−18.0	43
466	547	−20.8	53
487	531	−22.5	73
523	506	−24.6	47

10/10 Sc, E (1/4 in. rime), 880-1,240 m; 10/10 As, unknown, (1/4 in. rime) 2,150-2,530 m; 10/10 As, unknown, (1/4 in. hard, opaque ice) 3,340-3,790 m; moderate turbulence, 3,200-3,790 m.

*Oct. 21, 8:41 a. m.

H	P	T	R
14	976	−3.0	86
21	968	0.9	70
31	955	3.0	62
44	940	3.9	58
89	889	0.9	67
100	877	2.4	58
160	814	0.1	54
187	788	−1.7	54
226	748	−5.7	69
237	738	−5.7	71
314	667	−12.5	90
319	663	−12.0	76
366	624	−14.7	64
428	574	−19.5	71
483	534	−24.3	79
519	500	−26.8	71

6/10 Ac, SW, at 1,620 m (estimated); moderate turbulence from 1,870 m; 1/10 Cs, SW.

#Oct. 21, 9:53 a. m.

H	P	T	R
14	976	−1.8	95
132	840	−4.2	69
149	822	−5.6	58
222	748	−12.4	54
263	709	−15.6	31

1/10 As, SW; 7/10 Ac, SW. Pressure data erratic.

*Oct. 24, 8:34 a. m.

H	P	T	R
14	980	−5.0	100
23	968	−1.7	88
30	960	−1.7	86
51	935	2.4	66
67	916	2.6	62
104	874	0.2	65
114	864	0.9	65
126	851	0.6	62
187	788	−3.6	64
255	723	−8.8	78
333	653	−14.6	74
413	587	−21.2	88
463	548	−24.8	64
510	514	−28.9	59

Light fog at surface; Few Ac, SE, at 4,390 m (estimated).

#Oct. 24, 9:35 a. m.

H	P	T	R
14	980	−0.5	78
89	893	5.5	91
128	850	4.8	69
228	750	−5.0	68
247	732	−9.0	94
374	620	−16.9	73
413	589	−21.2	51

Light fog at surface; Few Ac, SE.

#Oct. 25, 9:06 a. m.

H	P	T	R
14	977	−2.8	88
46	937	−1.3	73
93	884	−2.5	73
143	829	−4.4	85
171	800	−4.4	91
237	735	−5.6	72
290	687	−8.7	74
363	626	−9.2	77
401	596	−10.4	79
444	563	−11.6	77
501	522	−14.1	78
579	470	−17.6	73
678	412	−23.0	71

10/10 Sc, SE.

#Oct. 26, 9:55 a. m.

H	P	T	R
14	985	−5.6	95
75	912	2.0	51
105	878	0.2	53
146	834	0.3	48
200	780	−2.8	53
280	704	−6.6	84

8/10 Ac, W.

*Oct. 27, 8:45 a. m.

H	P	T	R
14	984	−7.8	100
23	972	−1.3	82
59	930	2.8	65
80	907	1.8	63
87	898	2.0	62
108	875	1.3	64
148	832	−1.7	68
156	823	−1.6	65
214	765	−5.9	59
279	704	−11.0	66
331	657	−15.8	72
341	648	−15.3	57
353	638	−15.3	52
362	631	−15.0	48
369	624	−15.0	44
433	566	−20.0	35
506	520	−25.5	32

Light ground fog: cloudless.

#Oct. 27, 9:26 a. m.

H	P	T	R
14	984	−6.1	95
106	874	0.0	78
118	861	−1.8	74
162	815	−6.4	67
177	800	−6.2	68
185	793	−8.0	73
191	786	−8.9	67

Light ground fog; cloudless.

*Oct. 30, 8:30 a. m.

H	P	T	R
14	993	−15.0	92
31	972	−7.5	90
38	962	−7.6	90
53	944	−5.0	77
60	935	−5.3	71
95	895	−1.8	60
104	885	−1.7	51
154	831	−5.1	54
160	823	−5.1	54
166	817	−5.4	51
186	796	−4.5	45
199	783	−4.9	40
256	728	−8.3	40
308	680	−12.0	40
321	669	−11.9	39
358	637	−15.3	39
384	616	−16.4	38
457	558	−22.3	35
515	516	−26.7	35

Light ground fog; cloudless; moderate turbulence from 4,570 m.

#Oct. 30, 9:38 a. m.

H	P	T	R
14	993	−11.7	90
43	956	−4.9	62
171	811	−5.3	60
197	785	−5.7	59
219	762	−7.2	54
233	750	−7.0	55
274	711	−8.1	52
320	670	−9.6	51
355	640	−11.1	48
383	618	−11.9	49
468	552	−18.9	46
485	540	−19.7	39
586	470	−25.0	43
674	417	−28.7	42

Light fog; cloudless.

#Oct. 31, 9:55 a. m.

H	P	T	R
14	992	−7.8	88
49	948	1.5	88
256	729	−8.0	81
446	570	−15.5	

10/10 Sc. SE.

*Nov. 2, 8:53 a. m.

H	P	T	R
14	982	0.7	69
21	972	4.8	56
32	960	5.1	54
47	942	4.6	52
120	860	−0.9	60
128	852	0.6	61
134	846	0.6	62
142	837	1.8	60
212	766	−3.2	60
289	694	−9.2	71
363	631	−13.0	56
444	567	−18.6	51
528	506	−25.3	62

6/10 As, S, 4,920-5,276 m.

*Nov. 5, 8:44 a. m.

H	P	T	R
14	984	−7.0	98
28	968	−5.5	100
34	958	−5.4	100
52	937	−3.0	90
65	922	−3.0	82
68	917	−2.7	70
147	830	−7.5	65
218	756	−14.2	97
236	740	−15.2	99
242	733	−14.3	79
317	664	−20.5	80
358	628	−23.0	60
429	569	−29.0	64
500	515	−35.5	59

8/10 Sc. SW, 2,180-2,420 m.; moderate turbulence, 1,470-2,420 m.

#Nov. 5, 9:55 a. m.

H	P	T	R
14	984	−5.3	95
37	954	−2.0	79
102	878	−4.0	68
355	631	−22.2	67
415	581	−27.5	66
459	546	−33.4	64

3/10 Sc, SW; 1/10 Ac, S.

#Nov. 6- 8:55 a. m.

H	P	T	R
14	983	−10.6	94
60	925	−4.0	82
139	836	−9.7	74
195	776	−14.8	69
275	699	−17.9	69
305	670	−22.4	69
379	607	−24.3	72
578	459	−35.8	-----

3/10 St, SE; 6/10 Cs, SW.

#Nov. 7, 8:38 a. m.

H	P	T	R
14	982	−11.1	93
45	942	−9.4	54
126	848	−8.4	65
173	798	−10.6	72
254	718	−14.7	75
320	657	−16.2	80
364	621	−17.2	75
394	597	−20.0	73
417	578	−20.9	71
460	545	−25.6	73
535	491	−30.1	72
603	446	−33.5	70
669	406	−36.1	69
756	358	−39.2	69

10/10 St, N; light snow at surface.

*Nov. 8, 8:51 a. m.

H	P	T	R
14	999	−19.4	89
25	986	−9.1	48
85	910	−11.6	68
94	900	−9.7	68
142	845	−11.5	69
196	788	−15.7	86
203	780	−14.8	81
214	769	−16.0	78
221	761	−15.9	77
263	720	−18.6	82
319	667	−23.7	79
370	621	−26.5	73
441	563	−32.2	61
505	514	−36.6	56

2/10 St, SW, at 1,170 m. (estimated).

#Nov. 8, 10:32 a. m.

H	P	T	R
14	1,000	−16.7	89
209	771	−12.5	69
436	570	−24.5	63
487	530	−25.3	61
533	498	−28.4	61
651	422	−34.3	58
716	384	−36.9	58

2/10 St, SE.

#Nov. 10, 7:59 a. m.

H	P	T	R
14	993	−1.9	90
212	773	0.5	91
269	720	1.2	91
288	703	0.6	89
339	660	−1.2	83
389	620	−4.8	78
445	578	−5.7	75
504	536	−9.9	76
589	479	−13.1	76
666	433	−16.9	71
740	392	−19.3	69
852	337	−23.6	59

10/10 St. W.

*Nov. 11, 8:50 a. m.

H	P	T	R
14	993	−4.4	97
18	988	0.5	75
33	971	1.3	59
59	939	1.0	57
72	924	2.3	53
100	892	2.5	48
107	884	6.9	45
122	869	6.6	41
133	857	7.4	37
145	846	7.2	33
155	835	7.5	30
163	827	7.3	30
207	784	3.6	35
210	780	3.7	37
222	768	2.9	46
235	756	3.3	49
256	737	2.2	54
264	729	2.4	55
315	684	−1.3	68
372	635	−5.6	83
443	581	−9.8	90
533	517	−16.3	91

8/10 As, S, from 3,760 m; moderate turbulence from 1,680 m.

#Nov. 12, 8:14 a. m.

H	P	T	R
14	999	−9.6	94
64	936	−6.0	44
130	861	−5.6	52
150	839	−4.9	47
174	814	−4.9	44
225	762	−8.0	40
265	724	−8.4	37
299	693	−9.8	36
343	655	−12.6	42
375	627	−14.3	46
426	586	−18.9	50
477	547	−19.7	45
525	513	−21.4	41

1/10 As, W; 2/10 Cs, NW.

#Nov. 13, 8:24 a. m.

H	P	T	R
14	1,004	−14.8	92
97	902	−2.1	60
264	730	−0.8	37
428	594	−7.4	38
673	429	−24.0	32
781	370	−29.4	31

Few Cs, unknown.

*Nov. 14, 8:38 a. m.

H	P	T	R
14	1,011	−13.8	100
30	991	−8.7	100
41	977	−9.0	100
50	965	−7.5	100
58	955	−7.3	94
81	927	−2.9	100
93	913	−3.0	100
126	877	−3.8	100
138	863	−2.8	88
163	835	−1.2	62
189	807	−2.6	52
243	755	−1.9	59
300	703	−3.3	71
382	633	−6.6	48
393	624	−6.6	45
465	569	−11.1	36
521	529	−14.3	32

10/10 St, NW, 850-1,260 m.

#Nov. 14, 9:55 a. m.

H	P	T	R
14	1,011	−13.4	92
55	957	−9.6	51
70	940	−10.4	59
142	857	−4.9	69
169	826	−4.1	55
229	765	−3.9	45
257	740	−3.1	58
317	686	−4.5	71
364	646	−5.2	56
407	612	−6.6	45
513	533	−11.3	34
578	490	−13.3	32
645	447	−19.2	32
796	364	−26.2	31
948	295	−30.8	30

10/10 St. NW.

#Nov. 15, 10:10 a. m.

H	P	T	R
14	1,014	−7.9	93
65	948	−8.3	85
91	918	−6.6	85
113	892	−6.2	83
150	852	−5.1	67
199	800	−5.8	57
261	738	−5.1	56
323	683	−7.1	46
373	639	−9.5	39
453	577	−11.7	36
518	529	−14.3	40
588	483	−17.3	39

9/10 St, E.

#Nov. 16, 8:28 a. m.

H	P	T	R
14	1,008	−7.9	98
109	891	−5.5	82
154	843	−2.6	59
195	800	−0.1	38

10/10 St, W; Light fog and light snow.

TABLE 2.—*Free-air data for significant levels obtained by means of airplane and radiosonde observations*—Continued

WINTER 1937-38.

[Times are for 150th meridian]

H=Height in decameters above sea level. T=Temperature in degree centigrade.
P=Pressure in millibars. R=Relative humidity (percent).

* Airplane observation.
# Radiosonde observation.

*Nov. 17, 18:59 a. m.

H	P	T	R
14	1,012	−14.4	95
21	1,003	−8.6	86
49	968	−8.7	76
61	952	−7.4	71
82	925	−7.9	70
91	916	−7.2	71
128	873	−9.3	79
144	855	−9.2	79
150	848	−8.7	77
168	828	−9.6	78
177	819	−8.7	74
195	800	−8.4	69
216	779	−5.4	57
229	766	−5.5	55
242	753	−6.3	54
258	737	−5.3	48
276	721	−5.2	42
340	664	−9.2	32
412	604	−13.7	28
500	538	−20.3	28

Few St, unknown.

#Nov. 17, 9:43 a. m.

H	P	T	R
14	1,012	−17.3	87
71	938	−11.6	76
116	885	−9.5	76
146	850	−9.3	74
179	815	−10.4	74
295	789	−8.2	64
244	749	−6.4	44
266	728	−6.9	38
324	676	−8.7	36
374	633	−12.5	36
430	588	−17.2	30
501	535	−22.1	29
551	500	−26.8	32
604	464	−30.4	30
662	428	−36.0	30
727	388	−39.5	30
801	349	−42.8	30

Few St, unknown.

#Nov. 18, 8:12 a. m.

H	P	T	R
14	1,009	−21.1	84
50	963	−5.0	-----
160	836	−2.1	37
529	515	−22.8	44
608	463	−28.1	43

2/10 As, W.

#Nov. 19, 9:37 a. m.

H	P	T	R
14	1,005	−21.1	84
34	977	−11.9	53
105	891	−12.8	55
148	842	−14.2	55
190	796	−14.2	55
364	632	−19.7	49
440	570	−23.6	42
525	507	−29.1	40

Few As, NE.

*Nov. 20, 8:45 a. m.

H	P	T	R
14	1,011	−19.0	49
21	1,001	−15.8	49
75	934	−18.7	50
82	925	−17.5	50
127	870	−20.2	52
128	868	−19.7	52
166	824	−22.5	52
199	788	−23.6	54
201	785	−22.7	54
231	754	−25.0	55
240	744	−24.3	55
300	686	−28.7	55
318	669	−27.4	55
354	635	−29.2	52
444	559	−36.1	50
507	510	−39.2	49

Few As, unknown.

#Nov. 20, 9:40 a. m.

H	P	T	R
14	1,011	−18.8	57
49	963	−16.0	50
73	934	−19.4	52
116	881	−18.4	49
143	850	−19.8	52
189	799	−24.8	55

Few As, unknown.

#Nov. 21, 3:33 p. m.

H	P	T	R
14	1,002	−17.4	59
65	935	−18.7	43
73	925	−19.0	42
135	852	−18.7	45
184	797	−16.3	47
272	710	−19.2	58
308	675	−21.7	62
384	609	−28.3	63
430	570	−32.0	62
472	537	−36.4	63
521	500	−37.9	62
589	453	−40.0	61

9/10 As, SE.

#Nov. 22, 8:40 a. m.

H	P	T	R
14	993	−19.4	68
75	914	−12.2	26
158	819	−9.2	25
248	728	−7.6	23
397	601	−18.6	-----
424	580	−19.9	-----

4/10 Sc, SE.

*Nov. 23, 8:41 a. m.

H	P	T	R
14	986	−15.6	75
17	982	−11.4	74
30	965	−8.8	64
35	959	−8.8	60
77	909	−9.3	63
95	888	−8.6	64
102	880	−8.2	65
113	868	−8.3	65
131	848	−6.0	64
145	834	−6.5	65
158	820	−5.4	66
176	800	−5.6	67
182	794	−4.3	68
233	744	−6.0	64
303	680	−9.3	68
388	606	−15.6	77
465	548	−20.9	66
512	514	−24.6	66

1/10 As, NE; 2/10 Cs, unknown.

#Nov. 23, 9:40 a. m.

H	P	T	R
14	986	−17.5	88
106	873	−9.8	58
208	765	−7.5	67
255	719	−8.0	67
319	661	−9.0	73
346	639	−11.6	74
367	622	−12.8	77
405	591	−14.4	77
432	570	−16.4	76
469	543	−20.1	74
510	514	−23.6	73
530	502	−24.0	69
618	442	−30.7	65
659	417	−33.7	63
713	386	−36.5	-----
788	347	−39.9	-----

Few As, NE; 1/10 Cs, unknown.

#Nov. 25, 12:07 p. m.

H	P	T	R
14	991	−13.9	40
243	730	−17.2	40
264	710	−17.2	36
322	655	−21.7	30
343	637	−23.8	29
436	560	−26.1	26
710	381	−35.9	26
757	357	−42.0	26
847	313	−43.4	26
876	298	−43.2	25
956	266	−42.0	26
1,000	249	−41.3	26

Few Sc, E.

*Nov. 26, 8:53 a. m.

H	P	T	R
14	989	−11.4	16
16	986	−8.6	53
20	979	−8.4	53
26	973	−7.0	52
39	955	−7.0	51
103	881	−11.6	52
126	856	−3.6	54
135	846	−3.1	53
145	836	−1.5	52
171	808	−3.0	50
218	760	−7.0	49
265	716	−10.5	51
318	668	−15.2	51
374	620	−19.4	54
437	569	−25.0	52
510	515	−31.2	53

4/10 Sc, E, at 3,910 m. (estimated); moderate turbulence from 1,030 m; few St, NE.

#Nov. 26, 9:27 a. m.

H	P	T	R
14	989	−11.6	50
25	972	−12.0	37
74	914	−12.4	39
135	843	−6.9	40
166	812	−8.4	37
196	780	−8.7	40
240	735	−11.4	40
322	659	−16.7	40
369	619	−19.1	40
454	550	−24.4	39
535	494	−29.3	39
617	440	−32.3	38
704	388	−35.9	37
740	368	−36.8	38
800	339	−40.1	38

3/10 Sc, E.

#Nov. 27, 9:05 a. m.

H	P	T	R
14	983	−10.9	76
27	963	−4.5	48
154	820	−8.7	65
182	792	−8.7	72
215	757	−9.6	77
285	691	−14.4	85
516	503	−31.8	86
556	476	−33.3	84
606	444	−36.3	82

10/10 As, SE; light snow, 9:05 to 9:30 a. m.

#Nov. 28, 9:10 a. m.

H	P	T	R
14	990	−21.7	93
266	710	−0.7	48
310	674	−2.4	47
376	619	−3.4	48
426	581	−5.4	44
461	554	−7.6	44
516	517	−10.7	40
556	490	−12.0	40
605	461	−16.2	39
683	416	−18.4	39

1/10 St, W; 3/10 As, SW.

*Nov. 29, 8:38 a. m.

H	P	T	R
14	987	−19.8	87
28	969	−7.5	76
32	964	−7.1	73
51	941	−3.7	62
84	901	−5.7	62
105	878	−2.5	60
113	868	−2.5	56
136	843	−3.6	51
164	814	−5.6	48
229	748	−11.0	56
297	685	−16.2	63
366	625	−21.9	72
446	559	−28.4	73
498	520	−32.6	73
514	508	−33.7	73

4/10 Sc, NE; 3/10 As, NE, from 3030 m.; 7/10-10/10 As, from 4980 m.

#Nov. 29, 9:51 a. m.

H	P	T	R
14	987	−16.7	97
44	949	−6.8	89
59	929	−5.1	83
87	897	−5.6	82
113	867	−4.8	87
130	847	−4.5	71
166	812	−5.8	61

4/10 St, NE; 5/10 As, NE.

#Nov. 30, 8:43 a. m.

H	P	T	R
14	985	−13.3	92
29	961	−9.1	70
149	824	−12.8	89
197	775	−12.8	97
243	729	−14.8	96
275	699	−15.8	97
330	648	−18.1	95
389	601	−23.6	93
436	561	−27.6	92
466	537	−32.9	84
534	487	−41.5	91
576	459	−45.0	89

10/10 St, NW; moderate snow.

#Dec. 1, 8:23 a. m.

H	P	T	R
14	1,004	−12.4	92
42	966	−8.4	56
83	918	−15.6	65
112	881	−16.2	67
151	837	−18.0	71
199	786	−18.8	76
238	744	−19.8	79
260	722	−20.5	81
278	704	−21.4	82
303	681	−22.6	82
333	652	−24.2	83
355	633	−25.0	83
415	583	−27.0	81
517	506	−29.4	77
568	472	−32.9	75

10/10 St, S; light snow.

*Dec. 2, 9:42 a. m.

H	P	T	R
14	1,012	−16.9	98
50	964	−17.4	99
81	925	−18.1	97
99	903	−18.7	100
113	886	−19.4	99
126	869	−19.7	98
138	856	−19.1	98
151	842	−19.5	97
167	823	−17.7	97
185	805	−18.8	90
194	795	−19.9	95
244	743	−22.5	92
290	698	−23.1	88
303	686	−23.3	79
332	659	−25.0	66
403	597	−29.1	61
454	555	−32.8	55
502	518	−35.9	56

10/10 St, W, (¼ in. hard, opaque ice) 500-1940 m; light snow at surface.

#Dec. 3, 8:18 a. m.

H	P	T	R
14	1,013	−31.6	83
19	1,007	−28.0	49
31	989	−25.3	45
101	898	−21.2	48
152	836	−24.3	50
271	710	−25.7	48
327	657	−28.2	46
375	615	−29.7	44
417	578	−32.4	44
428	568	−33.7	43
545	482	−39.0	42
559	472	−41.3	44
589	452	−43.2	43
644	416	−43.9	42
688	390	−45.7	41
750	354	−47.2	42
812	323	−48.1	41
850	306	−49.3	41

Few St, NE.

*Dec. 5, 8:59 a. m.

H	P	T	R
14	992	−13.9	68
18	986	−12.9	68
28	975	−13.0	69
64	928	−14.8	72
105	880	−11.0	85
153	826	−13.1	94
180	797	−13.9	100
205	772	−7.4	100
250	727	−9.8	94
299	683	−11.9	96
354	635	−14.3	100
438	568	−19.1	90
504	520	−24.3	86

10/10 St, E, 180-4380 m; heavy snow, 9:10-10:50 a. m. at surface.

#Dec. 5, 9:18 a. m.

H	P	T	R
14	992	−13.5	72
47	947	−14.9	60
121	860	−11.2	59
157	822	−10.5	64
216	760	−9.5	74
269	708	−11.0	79
323	660	−11.5	83
360	628	−14.5	82
432	571	−17.0	84
508	515	−24.6	79
531	500	−27.5	71
619	441	−36.4	67
771	355	−38.8	58

10/10 St, E; heavy snow 9:10-10:50 a. m. at surface.

#Dec. 6, 8:57 a. m.

H	P	T	R
14	1,009	−23.3	87
58	952	−9.9	65
109	890	−17.2	59
334	657	−17.2	64
380	618	−22.0	65
435	574	−24.3	64

4/10 As, W.

#Dec. 7, 8:29 a. m.

H	P	T	R
14	1,015	−18.6	90
28	996	−1.2	55
72	944	1.5	59
104	908	1.1	61
115	895	0.5	66
154	848	−0.9	70
220	781	−2.7	65
257	745	−5.2	65
331	677	−9.3	54
413	608	−12.0	43
457	575	−14.5	42
513	534	−17.2	38
543	512	−19.4	38
654	442	−24.1	37
688	422	−25.3	35
836	343	−28.7	35
1,005	271	−33.5	34

Few As, NW.

*Dec. 8, 8:44 a. m.

H	P	T	R
14	1,016	−8.1	73
36	987	−3.1	60
92	920	−2.9	46
151	854	−1.4	36
179	823	−3.1	31
191	811	−1.9	30
223	779	−4.2	28
229	773	−3.6	27
266	737	−6.2	25
312	695	−9.8	23
325	684	−9.2	23
347	664	−10.5	22
406	615	−15.8	21
468	566	−21.1	21
478	558	−20.8	21
494	546	−21.6	21
535	517	−25.2	21

Cloudless.

#Dec. 8, 9:04 a. m.

H	P	T	R
14	1,016	−11.1	78
76	938	−4.9	47
105	904	−4.5	36
129	874	−3.7	29
218	781	−4.0	24
292	710	−6.0	23
361	648	−10.5	19
393	622	−15.2	18
457	564	−19.8	16
546	507	−25.2	16
615	461	−33.0	15
641	443	−35.7	15
756	377	−40.3	15

Cloudless.

#Dec. 9, 9:29 a. m.

H	P	T	R
14	1,017	−17.9	36
79	932	−18.0	40
117	886	−17.7	42
159	836	−20.0	41
217	774	−21.5	41
256	732	−23.8	39
313	680	−26.1	38
343	651	−27.0	38
462	548	−29.8	37
509	514	−30.2	34
660	416	−37.8	35

Cloudless.

Dec. 10, 8:5[illegible] a. m.

H	P	T	R
14	1,003	−24.4	55
60	940	−22.1	39
98	894	−26.3	38
208	764	−33.0	39
234	737	−32.0	42
256	715	−31.8	39
307	666	−35.5	42
360	614	−32.5	37
426	560	−39.2	37
477	521	−42.4	39

Few As, unknown.

*Dec. 11, 9:25 a. m.

H	P	T	R
14	991	−24.0	58
48	945	−24.1	54
97	882	−28.1	54
152	817	−31.8	55
216	745	−36.5	56
234	727	−35.8	57
266	694	−37.1	57
278	682	−36.1	56
306	655	−35.0	55
356	610	−37.1	52
364	603	−36.3	52
410	564	−36.9	47
454	529	−37.6	42

1/10 St, unknown.

TABLE 2.—*Free-air data for significant levels obtained by means of airplane and radiosonde observations*—Continued

WINTER 1937-38.

[Times are for 150th meridian]

H=Height in decameters above sea level. T=Temperature in degree centigrade.
P=Pressure in millibars. R=Relative humidity (percent).

* Airplane observation.
# Radiosonde observation.

#Dec. 11, 4:04 p. m.

H	P	T	R
14	991	−26.2	49
137	834	−30.5	38
241	720	−31.4	36
297	667	−27.5	36
336	630	−25.2	38
402	574	−29.0	43
468	523	−31.1	48
564	456	−38.7	43
672	390	−44.1	44

4/10 As, SW.

#Dec. 12, 12:12 p. m.

H	P	T	R
14	998	−29.5	76
47	953	−18.4	33
88	901	−16.3	40
116	870	−9.6	39
176	805	−13.1	43
205	773	−15.8	42
272	706	−19.6	38
313	671	−20.4	35
375	615	−20.9	34
436	564	−25.5	34
482	530	−27.0	35
531	496	−31.5	33
605	446	−35.9	32
688	397	−37.6	31
830	323	−37.9	31

5/10 As, W.

#Dec. 13, 8:08 a. m.

H	P	T	R
14	993	−31.2	82
60	932	−23.1	38
98	886	−17.0	38
129	849	−13.0	34
194	779	−14.3	31
259	714	−15.2	26
347	634	−17.6	24
413	579	−22.7	22
473	534	−28.6	20
537	488	−34.3	20
670	404	−38.3	20
770	348	−43.4	19
826	322	−47.0	19
928	274	−49.1	18
991	248	−52.2	18
1,147	196	−52.4	17
1,220	175	−52.8	18
1,291	157	−55.0	18

1/10 As, unknown.

*Dec. 14, 8:36 a. m.

H	P	T	R
14	969	−18.2	85
21	958	−12.4	-----
29	949	−12.1	-----
42	934	−12.9	-----
71	900	−11.3	-----
79	890	−9.5	-----
88	880	−9.3	-----
106	860	−10.1	-----
120	844	−4.9	-----
132	830	−3.9	-----
147	815	−3.9	-----
216	745	−8.4	-----
293	675	−14.6	-----
382	600	−19.0	-----
444	552	−24.2	-----
469	532	−26.7	-----
475	528	−27.4	87

10/10 As, S; moderate turbulence from 4,440 m; moderate snow from 4,690 m.

#Dec. 14, 9:24 a. m.

H	P	T	R
14	969	−18.1	88
98	868	−10.8	55
161	799	−7.2	58
264	700	−10.3	62
281	683	−12.8	65
346	626	−15.2	70
382	598	−17.8	74
438	553	−19.8	75
471	529	−22.1	74
503	506	−26.8	69
587	452	−31.5	75
626	428	−37.3	67

10/10 As, S.

#Dec. 15, 8:31 a. m.

H	P	T	R
14	975	−19.9	90
107	861	−8.0	78
146	819	−8.0	83
215	748	−7.7	70
326	646	−17.9	72
464	534	−30.4	78
557	449	−39.4	79
687	389	−40.9	80
766	346	−45.8	79
896	284	−51.1	76

3/10 St, S; 2/10 As, SW.

#Dec. 16, 8:39 a. m.

H	P	T	R
14	980	−26.7	88
83	893	−12.5	77
112	861	−8.4	64
124	846	−8.2	62
134	836	−10.1	66
200	768	−11.5	69
225	742	−11.5	69
259	710	−13.4	68
298	675	−15.8	65
367	612	−21.4	63
418	570	−26.4	61
500	510	−32.6	60
559	470	−32.2	60

Few As, unknown.

#Dec. 17, 9:05 a. m.

H	P	T	R
14	980	−26.1	86
55	928	−10.5	55
139	830	−5.8	52
185	784	−7.9	55
243	727	−10.7	58
290	684	−12.4	60
379	607	−15.8	59
426	568	−20.5	57
530	493	−33.8	49
611	438	−40.5	48
747	358	−45.9	51
882	292	−52.1	46
1,048	226	−54.9	47

Cloudless.

*Dec. 18, 8:47 a. m.

H	P	T	R
14	979	−15.4	91
23	968	−5.9	73
29	960	−2.7	70
35	952	−2.4	62
83	896	−5.1	66
97	881	0.6	58
106	871	0.6	49
171	802	−4.5	56
231	743	−9.2	71
296	683	−13.7	76
306	674	−12.9	70
374	616	−17.8	76
440	563	−20.0	73
476	537	−22.4	88

9/10 As, SW, from 4,400 m.

#Dec. 18, 9:21 a. m.

H	P	T	R
14	979	−15.0	93
84	894	−7.2	76
180	789	−6.6	63
296	680	−10.2	70
392	599	−16.1	76
500	516	−17.7	74
587	460	−26.0	78
648	422	−34.8	78
751	363	−43.3	79
900	291	−51.6	77

Few Sc, unknown; 9/10, As, SW.

#Dec. 19, 8:47 a. m.

H	P	T	R
14	976	−6.4	99
87	890	3.4	63
158	814	0.8	63
228	744	−4.1	63
329	652	−8.0	65
430	572	−12.3	70
499	523	−16.3	60
578	471	−21.0	58
654	426	−24.3	53
737	379	−31.6	54
839	328	−30.7	54
916	295	−25.6	50
960	278	−26.9	47

2/10 St, SW; 1/10 Sc, SW; 1/10 As, SW.

*Dec. 20, 8:37 a. m.

H	P	T	R
14	1,006	−4.1	94
54	954	−6.9	98
102	899	−10.2	100
155	838	−12.7	97
166	826	−11.1	92
211	778	−14.7	93
272	718	−18.0	100
347	648	−22.4	93
421	586	−27.8	97
484	537	−32.1	94
530	503	−35.6	94

10/10 St, SW, from 540 m.

#Dec. 20, 9:35 a. m.

H	P	T	R
14	1,008	−7.2	76
127	871	−14.0	100
183	807	−15.1	88
270	717	−21.6	88
329	662	−24.1	90
357	637	−26.0	90
425	580	−29.4	87
492	527	−34.0	86
567	472	−39.0	86
666	408	−45.5	83
799	336	−47.4	82
869	301	−48.6	81
938	271	−49.6	81
1,119	206	−48.4	80

10/10 St, SW.

#Dec. 21, 8:39 a. m.

H	P	T	R
14	1,034	−12.8	90
45	994	−13.7	65
76	953	−12.9	72
124	894	−16.1	78
212	796	−18.5	81
269	733	−24.1	79
419	598	−22.0	86
516	524	−26.4	83
585	476	−30.5	79
672	421	−34.0	77
756	373	−37.7	72
847	327	−41.3	69
953	278	−47.8	67
1,010	256	−51.9	69

Heavy snow; 10/10 St, S.

#Dec. 22, 12:15 p. m.

H	P	T	R
14	1,033	−5.1	84
56	979	−6.8	87
102	924	−7.2	87
150	867	−8.0	77
207	808	−13.0	58
245	765	−16.8	54
299	710	−19.8	46
370	644	−21.8	42
444	582	−24.0	39
523	523	−28.9	40
613	461	−32.7	40
697	408	−36.0	40
770	367	−40.4	40
912	298	−46.0	39

4/10 St, NW; few As, NW.

#Dec. 23, 9:38 a. m.

H	P	T	R
14	1,019	−10.4	96
107	904	−9.5	68
161	839	−12.0	53
287	712	−16.9	44
329	674	−18.6	39
498	534	−28.0	44
566	485	−27.7	41
595	467	−26.5	14
691	408	−25.5	13
800	352	−24.7	14
908	304	−24.3	11

10/10 St, S; light snow began 9:25 a. m. continued.

*Dec. 24, 8:40 a. m.

H	P	T	R
14	1,013	−29.8	81
20	1,005	−16.8	86
35	985	−14.8	86
58	954	−14.8	81
110	892	−15.6	82
141	856	−17.3	85
168	824	−17.4	81
215	775	−20.9	79
271	717	−24.6	74
300	689	−23.5	68
370	626	−27.1	57
439	569	−30.5	48
505	518	−34.6	47

Few As, unknown.

#Dec. 24, 9:13 a. m.

H	P	T	R
14	1,013	−26.1	84
84	923	−17.8	67
215	770	−23.1	62
270	712	−24.9	62
321	665	−26.4	57
365	624	−29.0	54
487	525	−39.2	46
566	468	−42.3	46
723	370	−48.9	44
817	321	−50.7	45
881	291	−55.3	45

Few As, unknown.

#Dec. 25, 8:42 a. m.

H	P	T	R
14	1,010	−27.2	82
159	827	−17.7	61
211	772	−18.1	60
291	692	−22.9	65
349	638	−26.9	67
406	589	−29.2	71
444	558	−32.4	71
507	510	−35.9	74
593	452	−40.7	72
694	389	−44.3	72
807	328	−50.8	61

6/10 As, SE.

*Dec. 26, 8:38 a. m.

H	P	T	R
14	994	−24.3	63
47	950	−22.0	65
79	910	−21.4	66
91	896	−19.9	66
107	876	−19.7	66
127	852	−20.6	67
142	836	−18.5	68
196	777	−21.7	65
256	715	−25.6	64
320	654	−30.9	66
343	634	−30.0	66
397	587	−34.6	60
444	548	−38.1	59
478	522	−36.4	56
492	512	−36.1	54
503	504	−36.6	52

3/10 St, N, at 2930 m. (estimated); strong turbulence from 470 m.

#Dec. 26, 11:29 a. m.

H	P	T	R
14	996	−30.0	81
54	942	−22.6	46
93	893	−22.9	47
160	814	−23.1	50
237	732	−27.5	47
334	641	−29.0	45
418	567	−36.7	43
511	495	−40.1	41
604	432	−44.3	40
674	390	−47.6	40
884	282	−55.5	38
963	249	−54.0	37

1/10 St, unknown.

#Dec. 27, 8:36 a. m.

H	P	T	R
14	1,007	−26.6	82
72	930	−25.0	38
133	852	−25.7	37
175	805	−28.7	38
256	718	−32.9	37
315	660	−35.2	39
395	589	−38.1	37

Few As, unknown.

#Dec 28, 5:30 p. m.

H	P	T	R
14	1,005	−30.3	74
94	898	−27.8	34
190	784	−27.8	44
208	765	−29.4	30
319	655	−29.7	30
409	578	−29.2	33

Cloudless.

*Dec. 29, 8:26 a. m.

H	P	T	R
14	1,001	−30.2	61
57	942	−32.3	62
94	895	−33.0	63
146	829	−35.3	63
158	816	−31.4	64
208	760	−29.0	64
270	697	−30.0	60
341	630	−32.8	58
414	568	−37.8	60
464	528	−41.2	63

4/10 As, E.

#Dec. 29, 5:07 p. m.

H	P	T	R
14	999	−27.9	52
147	826	−31.6	41
224	742	−36.7	37

3/10 As, E.

#Dec. 30, 10:41 a. m.

H	P	T	R
14	994	−28.9	65
136	838	−28.4	65
219	748	−24.2	44
271	694	−22.1	52
307	662	−23.5	51
340	632	−26.4	47
354	620	−28.6	45
476	521	−36.3	42
551	467	−40.2	41
742	353	−45.0	41
852	299	−47.0	40
906	276	−48.2	40

6/10 As, E; few Cc, E.

#Dec. 31, 9:08 a. m.

H	P	T	R
14	995	−31.6	75
181	791	−17.8	51
209	760	−21.2	51
258	712	−22.7	48
305	669	−21.2	42
341	635	−23.2	39
387	595	−26.4	36
399	584	−29.7	34
422	566	−34.5	33
470	529	−36.7	32
539	479	−37.9	32
613	431	−41.8	31

Few As, unknown.

*Jan. 1, 8:42 a. m.

H	P	T	R
14	991	−41.8	33
40	953	−26.2	35
60	927	−26.4	35
66	921	−26.8	35
92	888	−23.8	35
101	877	−23.6	36
111	866	−22.2	36
125	849	−22.5	36
153	818	−20.0	36
174	795	−21.0	35
189	778	−21.0	34
222	745	−22.4	33
294	674	−25.8	34
357	617	−29.9	35
407	575	−33.0	36
417	567	−32.4	36
463	531	−35.2	35
493	509	−36.6	35

Few As, unknown.

#Jan. 1, 9:45 a. m.

H	P	T	R
14	991	−41.0	75
156	808	−26.4	50
200	761	−21.9	52
235	725	−23.5	48
290	674	−25.3	51
311	653	−26.0	47
356	613	−28.6	49
409	569	−31.2	48
434	549	−31.5	47
459	531	−33.1	45
495	504	−35.4	42
538	474	−36.0	41
629	416	−39.1	39
681	386	−43.0	39

Few As, unknown.

#Jan. 2, 9:27 a. m.

H	P	T	R
14	983	−39.5	76
71	907	−20.7	46
108	862	−15.6	43
151	814	−13.3	38
190	773	−16.0	32
261	703	−20.2	28
301	666	−21.9	26
356	616	−24.0	23
412	570	−27.0	22
495	508	−29.4	21
574	455	−32.2	21
622	426	−35.2	20
708	376	−37.8	19
797	332	−39.4	20
855	304	−40.1	19

2/10 As, unknown.

TABLE 2.—*Free-air data for significant levels obtained by means of airplane and radiosonde observations*—Continued

WINTER 1937-38.

[Times are for 150th meridian]

H=Height in decameters above sea level. T=Temperature in degree centigrade.
P=Pressure in millibars. R=Relative humidity (percent).

* Airplane observation.
# Radiosonde observation.

#Jan. 3, 9:42 a. m.

H	P	T	R
14	980	−26.7	82
170	791	−16.4	79
239	723	−20.4	79
292	673	−25.9	71
350	617	−32.4	70
412	565	−37.2	74
485	508	−42.6	71
543	466	−46.9	71
619	416	−49.4	66
664	380	−52.0	63
757	337	−53.6	62
841	295	−53.6	59
926	259	−54.4	58

4/10 Sc, SW; few As, SW.

#Jan. 4, 10:57 a. m.

H	P	T	R
14	989	−23.3	83
25	973	−15.4	47
128	847	−20.8	-----
317	658	−14.0	79
418	574	−23.8	-----
487	522	−28.1	75
580	459	−36.0	73
616	436	−38.0	71

Moderate snow; 10/10 St, SW.

#Jan. 4, 4:16 p. m.

H	P	T	R
14	996	−21.7	83
83	906	−30.8	92
95	892	−29.0	94
145	830	−22.0	88
280	691	−26.2	89
346	628	−30.6	81
457	535	−38.8	68
510	497	−39.3	68

10/10 St, unknown.

*Jan. 5, 8:43 a. m.

H	P	T	R
14	986	−20.6	76
36	959	−2.5	64
39	953	−2.3	63
81	905	−5.4	65
86	899	−3.9	65
99	884	−3.8	61
105	878	−2.7	60
134	845	−5.2	54
143	836	−5.7	57
156	822	−3.9	57
176	802	−4.5	53
207	771	−6.5	50
237	742	−8.6	51
278	703	−12.0	57
319	666	−15.6	70
379	615	−17.9	78
459	552	−21.5	68

9/10 Sc, W; few As, W.

#Jan. 5, 9:27 a. m.

H	P	T	R
14	985	−20.5	85
52	938	−2.7	49
141	834	−2.7	47
224	751	−5.2	44
298	684	−9.2	45
357	632	−12.0	52
411	588	−14.5	55
460	549	−17.3	52
515	512	−21.8	49
560	481	−23.2	48
620	443	−27.4	45
666	416	−31.3	45
733	378	−37.1	44
838	325	−42.5	43
911	292	−46.3	43

5/10 Sc, W; few As, W.

#Jan. 6, 9:14 a. m.

H	P	T	R
14	977	−9.5	90
38	947	2.1	71
59	922	2.1	66
109	866	0.3	63
186	786	−2.0	65
229	744	−6.2	71
291	687	−12.0	79
355	630	−15.0	70
440	563	−21.7	71
494	523	−26.4	76
542	487	−29.4	69
598	451	−34.5	65
682	402	−39.0	64

9/10 As, SW; few Sc, SW.

*Jan. 7, 8:37 a. m.

H	P	T	R
14	975	−10.5	90
21	965	4.1	64
51	930	3.8	56
58	922	3.3	55
74	905	4.1	53
118	856	1.2	46
165	808	−2.7	45
207	766	−6.5	46
254	721	−10.8	49
289	688	−14.2	53
330	651	−17.8	63
386	605	−21.4	63
415	581	−23.5	61
423	575	−22.7	61
448	555	−24.7	60
483	529	−26.8	66
540	489	−29.2	72

9/10 As, SE (hard ice) from 4,480 m.

#Jan. 7, 9:14 a. m.

H	P	T	R
14	975	−8.3	95
120	850	2.0	60
270	702	−13.3	47
312	664	−17.0	49
392	597	−21.4	50
446	552	−24.4	49
509	507	−28.0	51
595	449	−34.8	52
686	395	−39.9	49
774	347	−47.2	50
824	321	−50.7	49
882	293	−56.4	49
945	266	−54.5	49
1,024	235	−49.8	49
1,125	202	−49.4	47

9/10 As, SE; few Sc, SE; few Cs, unknown.

#Jan. 8, 9:27 a. m.

H	P	T	R
14	981	−16.5	94
32	955	−4.7	73
76	906	0.2	66
94	885	−1.0	64
155	819	−1.5	54
206	766	−5.3	53
262	713	−10.5	56
350	634	−14.8	60
474	540	−22.2	57
515	511	−26.4	56

Light fog; 4/10 As, SW; 3/10 Cs, S.

#Jan. 9, 9:27 a. m.

H	P	T	R
14	1,004	−17.1	74
71	930	−22.4	90
337	647	−23.0	81
411	584	−26.4	78
476	534	−29.9	73
530	495	−33.7	70
591	463	−36.3	70
621	433	−38.8	70
765	352	−44.1	67

Light snow; 10/10 St, NW.

*Jan. 10, 8:48 a. m.

H	P	T	R
14	1,022	−36.4	57
23	1,010	−27.0	58
32	997	−26.2	60
60	958	−25.8	62
84	927	−27.2	64
101	905	−25.1	66
125	876	−26.1	67
144	855	−25.5	68
161	834	−25.0	69
170	823	−23.7	70
197	795	−22.2	73
232	756	−22.5	68
254	734	−21.5	63
308	683	−24.7	54
359	635	−26.9	50
412	591	−27.5	47
447	563	−30.0	45
515	511	−34.0	41

Light ground fog; few As, unknown.

#Jan. 10, 9:29 a. m.

H	P	T	R
14	1,022	−37.1	76
49	971	−24.3	71
118	883	−24.1	73
182	810	−22.8	73
210	780	−22.2	73
266	721	−22.1	65
295	695	−22.8	60
324	668	−24.3	57
406	595	−25.0	50
451	561	−29.6	46

Moderate fog; few As, unknown.

#Jan. 11, 11:22 a. m.

H	P	T	R
14	1,003	−32.7	79
35	974	−21.0	48
121	864	−20.0	48
174	807	−16.8	43
239	740	−16.0	39
287	695	−17.6	31
362	625	−17.8	31
404	591	−20.6	23
539	492	−25.4	20
657	420	−30.4	20
757	363	−33.7	19
803	341	−36.2	20
837	323	−37.9	20
868	309	−40.0	19
918	288	−43.0	17

Few Cs, NW.

#Jan. 12, 9:06 a. m.

H	P	T	R
14	994	−35.5	78
96	885	−25.0	45
170	800	−22.3	43
220	743	−21.8	40
299	669	−27.0	37
360	614	−24.7	36
441	549	−26.2	34
504	504	−27.6	32
541	478	−30.6	31
617	429	−35.5	31
678	395	−37.1	30
751	354	−41.0	31
825	318	−46.2	30

Cloudless.

*Jan. 13, 9:59 a. m.

H	P	T	R
14	986	−41.6	54
25	972	−24.2	57
35	958	−22.5	56
53	934	−21.9	55
61	923	−22.3	55
94	884	−21.7	54
100	876	−20.6	54
117	857	−20.3	53
127	845	−19.0	53
151	818	−18.5	52
178	789	−17.9	50
190	776	−17.1	48
243	723	−19.9	42
295	674	−22.5	39
357	619	−23.5	37
398	585	−24.5	35
438	553	−25.6	32
485	519	−25.6	29

Light fog; few As, unknown.

#Jan. 13, 11:04 a. m.

H	P	T	R
14	986	−40.2	76
74	903	−28.0	52
138	825	−25.2	52
201	757	−22.6	48
256	702	−25.8	44
331	632	−26.6	40
424	555	−29.5	36
489	508	−31.3	33
544	468	−34.4	32
651	402	−42.8	29
708	369	−46.6	29
785	329	−50.4	27
862	292	−55.9	27
933	261	−60.4	26

Light fog; few As, unknown.

#Jan. 14, 9:26 a. m.

H	P	T	R
14	982	−38.8	76
104	864	−27.9	62
122	841	−27.2	64
201	754	−23.6	60
266	689	−25.8	51
301	655	−25.8	48
344	618	−26.4	45
416	558	−28.1	43
451	532	−30.0	45
550	465	−35.0	48

2/10 Ac, SE.

#Jan. 15, 9:18 a. m.

H	P	T	R
14	979	−28.2	80
66	915	−14.2	61
104	868	−11.1	49
180	784	−14.3	44
245	718	−20.1	52
305	661	−23.4	59
400	580	−27.0	63
457	535	−28.5	59
529	485	−31.6	58
587	448	−34.0	59
634	419	−36.0	57

5/10 Ac, NW; 5/10 Cs, unknown.

#Jan. 16, 9:28 a. m.

H	P	T	R
14	970	−10.1	70
130	833	−5.6	58
161	801	−8.4	58
219	742	−9.9	60
277	688	−13.0	60
358	618	−16.2	64
436	556	−19.2	65
523	494	−28.2	65
646	415	−35.4	65
691	389	−39.4	65
754	355	−40.2	64
834	316	−43.2	64
914	280	−47.8	63
984	250	−49.9	63
1,059	224	−54.8	62
1,144	197	−58.0	62
1,232	171	−58.2	62
1,321	148	−58.2	62
1,413	128	−54.5	62
1,494	113	−54.0	62

10/10 Sc, SW.

*Jan. 17, 8:54 a. m.

H	P	T	R
14	975	−20.4	77
30	954	−8.0	75
38	943	−7.5	70
47	933	−4.4	62
59	919	−3.7	57
65	912	−3.8	55
89	884	−5.7	58
112	859	−1.5	46
156	813	−5.0	39
183	785	−7.5	41
238	731	−12.0	43
292	680	−16.3	41
366	616	−22.2	42
450	548	−28.1	51
529	491	−34.8	56

6/10 St, W; 4/10 Cs, unknown; moderate turbulence from 1,830 m.

#Jan. 17, 9:17 a. m.

H	P	T	R
14	976	−23.8	84
29	955	−10.0	84
57	922	−4.0	65
118	851	−6.8	55
169	798	−12.7	53
266	700	−21.1	54
354	620	−27.4	52
416	567	−32.8	51
462	532	−35.8	51
509	498	−41.3	51
621	420	−50.4	50
694	377	−51.8	50
729	357	−54.4	50

6/10 St, W; 4/10 Cs, unknown.

#Jan. 18, 9:10 a. m.

H	P	T	R
14	980	−25.7	83
26	963	−19.5	70
44	943	−14.6	77
75	902	−7.5	69
131	838	−7.2	62
202	767	−11.4	66
238	731	−15.0	69
309	666	−19.8	65
408	579	−29.8	61
482	521	−30.3	60
595	444	−37.7	61
639	416	−42.2	-----
713	374	−48.4	-----

3/10 St, SW; 1/10 Cs, W.

*Jan. 19, 8:46 a. m.

H	P	T	R
14	984	−24.3	76
28	965	−22.9	77
35	955	−23.3	79
54	932	−19.1	83
78	903	−14.7	91
91	886	−6.8	73
111	863	−6.9	71
121	852	−7.5	70
135	837	−7.7	69
177	793	−11.1	81
219	750	−14.7	92
243	727	−15.8	79
265	706	−17.9	80
333	644	−23.5	88
393	593	−28.9	87
426	566	−30.6	85
455	543	−33.1	84
519	496	−38.3	79

10/10 Sc, NW, 2,430–2,650 m; 7/10 As, unknown, 3,760–4,260 m; moderate turbulence, 2,190–4,550 m; ice formation 4,020–4,260 m.

#Jan. 19, 10:11 a. m.

H	P	T	R
14	984	−23.7	85
155	814	−13.9	75
199	769	−15.6	81
371	607	−24.0	72
492	514	−31.2	72
541	482	−34.0	71
606	436	−38.0	70
660	403	−41.7	68
776	339	−47.4	65
806	296	−50.8	66

10/10 Sc, NW.

#Jan. 19, 11:55 a. m.

H	P	T	R
14	984	−22.6	84
56	930	−6.6	83
139	834	−13.6	87
285	687	−21.0	86
370	612	−26.4	-----

Light snow; 10/10 Sc, W.

#Jan. 20, 11:28 a. m.

H	P	T	R
14	977	−19.8	86
71	905	−25.1	56
108	859	−24.0	61
267	688	−26.2	73
369	597	−35.2	71
439	538	−40.0	68
510	486	−42.6	66
574	442	−45.2	67

Light snow; 10/10 St, SE.

#Jan. 21, 9:10 a. m.

H	P	T	R
14	982	−22.2	83
39	950	−23.0	80
83	894	−23.6	85
125	841	−24.0	87
391	583	−29.6	93
499	498	−36.0	90
594	436	−39.6	88
649	403	−42.1	87
694	376	−44.4	84

Light snow; 10/10 St, E.

TABLE 2.—*Free-air data for significant levels obtained by means of airplane and radiosonde observations*—Continued

WINTER 1937-38.

[Times are for 150th meridian]

H = Height in decameters above sea level. T = Temperature in degrees centigrade.
P = Pressure in millibars. R = Relative humidity (percent).

* Airplane observation.
# Radiosonde observation.

*Jan. 22, 8:24 a. m.

H	P	T	R
14	1,000	−24.9	71
35	971	−27.3	74
58	942	−26.2	77
65	932	−24.5	78
77	917	−24.3	81
82	912	−22.8	84
87	904	−22.8	85
111	875	−25.0	88
117	868	−21.1	89
133	850	−20.6	89
144	837	−16.4	85
158	821	−16.4	79
198	778	−19.6	78
247	728	−22.9	74
258	717	−22.4	64
275	701	−22.6	57
348	633	−27.2	47
425	569	−32.0	43
438	558	−32.0	41
508	505	−36.7	39

10/10 St, NW, 870–1,170 m.

#Jan. 22, 11:48 a. m.

H	P	T	R
14	1,002	−24.3	81
62	938	−23.2	56
131	851	−20.8	58
200	778	−16.8	56
230	745	−18.8	55
290	688	−22.0	53
372	615	−26.3	55
430	566	−28.4	54
518	502	−33.2	53
601	444	−37.2	53
720	373	−42.4	53
813	326	−45.9	51

Snow flurries; 10/10 St, NW.

#Jan. 23, 9:20 a. m.

H	P	T	R
14	1,013	−29.9	82
32	987	−29.0	63
171	813	−24.4	61
267	712	−26.9	51
319	664	−29.0	48
378	610	−32.0	46
416	576	−35.4	44
464	536	−37.8	44
492	516	−40.4	43
509	461	−46.1	42
586	451	−46.1	41
614	432	−46.6	42

10/10 Sc, NE; light fog; snow flurries.

#Jan. 24, 8:58 a. m.

H	P	T	R
14	1,015	−39.3	76
32	988	−30.8	62
74	932	−28.0	75
110	886	−25.8	77
147	841	−25.8	77
180	805	−26.2	77
203	716	−28.8	66
340	643	−32.2	61
429	565	−35.3	53
448	549	−36.5	52
468	535	−38.0	52
562	466	−41.6	49
622	427	−42.0	48
716	371	−45.0	48
768	343	−45.0	46
858	301	−45.0	46
887	288	−45.0	44

Light ground fog; few Cs, unknown.

*Jan. 25, 8:52 a. m.

H	P	T	R
14	1,013	−40.8	60
43	972	−18.6	63
62	948	−17.9	62
68	940	−18.4	62
91	911	−15.7	58
119	878	−13.5	50
128	868	−13.2	48
166	823	−15.2	42
221	767	−17.2	38
292	698	−21.5	39
301	689	−21.1	38
337	656	−22.5	36
411	593	−26.9	35
469	546	−30.2	34
514	513	−33.6	33

Light ground fog; 1/10 Cs unknown.

#Jan. 25, 9:21 a. m.

H	P	T	R
14	1,013	−40.1	78
69	937	−20.1	57
101	896	−18.6	49
192	792	−20.0	39
262	720	−24.1	37
292	692	−25.6	35
365	624	−28.6	32
414	582	−31.5	31
479	532	−35.5	30
541	486	−36.8	29
582	458	−39.4	29
638	423	−43.0	28
699	386	−44.4	26
775	344	−47.0	26
867	300	−47.5	26
885	292	−47.0	27

Light ground fog; 1/10 Cs, unknown.

#Jan. 26, 10:54 a. m.

H	P	T	R
14	1,013	−34.8	77
86	918	−11.2	42
143	849	−11.7	39
187	803	−10.2	35
266	723	−11.5	30
300	692	−11.7	29
342	654	−13.8	28
426	586	−14.2	26
510	524	−21.7	25
606	461	−26.6	25
701	402	−29.0	25
781	361	−32.5	25

Light smoke; cloudless.

#Jan. 27, 9:06 a. m.

H	P	T	R
14	1,015	−33.4	80
83	926	−8.6	52
114	887	−9.1	45
134	862	−7.1	37
205	788	−7.4	28
223	770	−8.4	26
310	687	−16.4	19
366	638	−19.0	20
507	525	−26.0	21
568	483	−29.8	22
649	431	−33.8	22
682	412	−36.0	22
732	383	−38.6	22
768	363	−39.6	22

Light ground fog; cloudless.

*Jan. 28, 8:19 a. m.

H	P	T	R
14	1,022	−34.5	60
54	968	−15.4	62
64	955	−15.1	60
79	937	−14.3	58
90	924	−11.6	56
100	911	−12.0	52
107	903	−11.5	50
124	882	−12.6	46
140	864	−8.4	43
164	837	−8.4	37
192	807	−10.1	36
203	796	−9.2	36
238	760	−10.1	32
322	681	−15.2	26
385	626	−20.4	26
409	606	−21.4	26
443	579	−23.8	28
519	521	−28.6	38

Light ground fog; 1/10 As, NW; 2/10 St, NE.

#Jan. 28, 9:00 a. m.

H	P	T	R
14	1,022	−33.4	80
46	980	−25.5	72
57	961	−22.1	71
108	898	−18.3	61
179	819	−13.6	47
274	717	−18.0	37
324	674	−21.2	34
349	649	−24.0	-----
410	600	−25.8	-----
461	558	−29.1	-----

Light ground fog; 2/10 St, NE; 1/10 As, NW.

#Jan. 29, 9:25 a. m.

H	P	T	R
14	1,021	−33.9	81
40	986	−23.8	59
81	930	−19.1	52
139	860	−12.2	40
167	830	−10.4	32
202	793	−11.5	30
252	740	−12.8	24
299	698	−14.8	22
336	663	−17.8	-----
376	629	−18.4	-----
415	599	−18.9	-----
548	498	−23.2	-----
590	471	−26.2	-----
636	442	−28.6	-----
670	422	−31.7	-----
716	396	−33.8	-----

Light smoke; 8/10 Ci, unknown.

#Jan. 30, 9:20 a. m.

H	P	T	R
14	1,018	−20.6	84
68	948	−20.4	72
353	644	−21.8	69
400	606	−23.2	58
477	543	−28.0	48
529	506	−30.7	43
595	460	−34.8	40
639	432	−37.2	40
739	373	−39.0	37
803	340	−43.0	36
831	326	−44.9	36
920	285	−46.2	35
988	258	−44.8	35

Light snow; 10/10 St, W.

*Jan. 31, 8:15 a. m.

H	P	T	R
14	1,016	−19.9	88
19	1,008	−16.6	88
36	985	−15.9	88
44	974	−16.2	91
52	965	−16.0	91
95	912	−18.3	93
116	885	−19.4	90
145	852	−19.8	90
159	835	−18.4	89
177	815	−18.3	92
194	797	−19.5	95
212	778	−19.7	73
268	721	−24.4	61
318	673	−28.9	68
373	623	−32.5	73
379	618	−31.8	73
441	566	−36.1	76
503	517	−41.1	-----

Light ground fog; 6/10 As, NE, and light snow from 3,790 m.

#Jan. 31, 10:36 a. m.

H	P	T	R
14	1,017	−22.4	86
65	948	−18.0	84
155	840	−18.6	88
191	802	−19.2	78
252	734	−24.6	64
347	644	−29.8	58
406	595	−33.2	52
466	543	−38.9	54
549	483	−44.8	54

1/10 As, NE; 3/10 Ci, NW.

#Feb. 1, 8:45 a. m.

H	P	T	R
14	1,021	−20.5	86
30	998	−21.2	67
62	956	−21.6	69
96	915	−16.3	91
158	838	−17.7	68
187	809	−17.8	58
212	780	−20.7	52
262	728	−22.6	51
302	690	−24.1	48
342	651	−26.4	46
400	602	−30.1	44
464	548	−33.7	43
555	483	−38.0	44
669	408	−43.1	-----
739	368	−44.3	-----
812	331	−49.6	-----
915	282	−54.6	-----

Snow flurries; 10/10 St, NE.

*Feb. 3, 8:18 a. m.

H	P	T	R
14	1,010	−38.7	70
22	996	−28.0	74
31	985	−27.1	75
66	937	−26.6	80
91	907	−27.6	82
124	866	−27.9	84
183	798	−30.7	79
219	757	−30.0	70
286	688	−33.9	63
365	615	−39.2	61
427	562	−41.9	-----
470	526	−43.9	-----
498	505	−45.5	-----

Few As, unknown; light ground fog.

#Feb. 3, 8:48 a. m.

H	P	T	R
14	1,010	−36.7	79
57	950	−26.0	60
170	811	−26.9	61
199	780	−27.7	59
247	728	−29.1	53
298	679	−30.9	52
353	625	−33.2	51
396	589	−35.0	49
462	535	−37.8	49
507	502	−40.9	-----
538	480	−42.0	-----
648	408	−42.6	-----
707	374	−44.9	-----
763	344	−47.1	-----

Light fog; few As, unknown.

#Feb. 4, 9:20 a. m.

H	P	T	R
14	1,016	−34.6	79
72	938	−22.3	53
130	864	−23.7	50
204	782	−25.3	52
240	744	−27.4	47

Light ground fog; 2/10 As, NE.

#Feb. 5, 8:44 a. m.

H	P	T	R
14	1,023	−41.8	77
70	944	−33.0	68
136	858	−25.4	69
190	796	−30.3	68
232	749	−31.3	65
278	703	−30.6	68
327	654	−32.1	62
367	620	−34.0	63
488	519	−42.3	-----
523	494	−41.7	-----

Light ground fog and smoke; cloudless.

*Feb. 6, 8:29 a. m.

H	P	T	R
14	1,021	−44.6	55
32	995	−30.5	58
54	966	−27.1	58
87	922	−26.7	57
125	875	−21.9	56
167	826	−21.4	57
212	778	−24.3	58
224	765	−23.9	58
274	714	−24.5	55
345	647	−29.0	50
354	639	−29.1	49
416	585	−32.8	45
466	544	−34.7	44
503	517	−36.4	42

Light fog and smoke; cloudless.

#Feb. 6, 10:55 a. m.

H	P	T	R
14	1,020	−40.0	77
28	1,002	−24.3	54
65	951	−22.8	49
97	912	−21.8	49
121	879	−21.8	51
158	836	−21.8	49
209	779	−24.1	42
248	738	−23.2	38
306	683	−25.4	34
364	629	−29.4	31
437	568	−31.0	28
477	536	−34.0	26
555	480	−36.4	27
602	448	−39.7	26
660	412	−41.3	-----
724	374	−43.6	-----
779	345	−49.2	-----
838	315	−49.7	-----
870	300	−50.6	-----
970	258	−50.6	-----

Light ground fog and smoke; cloudless.

#Feb. 7, 8:58 a. m.

H	P	T	R
14	1,010	−41.7	78
78	922	−23.0	69
107	894	−23.7	67
174	808	−21.6	59
209	769	−22.5	52
245	732	−26.2	37
269	707	−27.0	35
330	650	−29.0	35
360	623	−29.7	32
449	549	−33.2	34
537	485	−33.9	32
636	422	−32.8	32
698	386	−34.8	29
757	355	−38.1	30

Light ground fog and smoke; cloudless.

#Feb. 8, 11:24 a.m.

H	P	T	R
14	1,020	−35.8	78
43	978	−24.3	46
115	887	−17.6	50
186	807	−19.5	36

Light ground fog and smoke; cloudless.

*Feb. 9, 8:27 a.m.

H	P	T	R
14	1,016	−32.6	76
31	992	−21.4	77
58	956	−16.7	64
73	937	−15.6	52
106	898	−10.3	45
165	831	−11.2	37
213	780	−12.3	36
241	752	−9.6	41
266	728	−10.6	55
287	708	−10.5	76
313	685	−11.5	93
323	676	−12.0	96
336	665	−11.8	96
344	657	−11.8	93
407	606	−16.7	96
434	585	−18.2	95
459	565	−19.7	93
471	556	−20.5	92
521	520	−23.6	86
524	517	−24.3	86

5/10 Ac, SW, 3,130–3,360 m; 6/10 Ac, SW, 4,070–4,710 m; layer As, unknown, 5,210–5,240 m; light ground fog and smoke.

#Feb. 9, 9:40 a.m.

H	P	T	R
14	1,015	−31.1	81
46	971	−11.0	54
88	920	−12.2	50
118	883	−14.4	46
152	844	−14.4	41
228	763	−15.1	37
291	702	−13.2	55
348	650	−13.7	72
388	619	−13.8	76
472	551	−20.2	79
527	512	−22.4	76
571	483	−25.7	75
639	439	−28.5	73
698	405	−32.0	72
795	353	−34.7	67
840	330	−38.2	67
911	298	−44.0	-----

Light fog and smoke; 9/10 As, SW.

TABLE 2.—*Free-air data for significant levels obtained by means of airplane and radiosonde observations*—Continued

WINTER 1937-38.

[Times are for 150th meridian]

H=Height in decameters above sea level. P=Pressure in millibars. T=Temperature in degree centigrade. R=Relative humidity (percent).

* Airplane observation.
# Radiosonde observation.

#Feb. 10, 9:07 a.m.

H	P	T	R
14	1,011	−20.1	86
61	946	−20.3	78
102	896	−18.0	73
118	876	−18.3	77
158	830	−18.8	72
202	785	−18.8	79
245	740	−17.3	56
278	706	−19.7	47
330	658	−23.6	42
402	596	−28.2	39
433	571	−29.0	38
496	523	−30.6	34
570	469	−38.2	33
608	445	−41.0	-----
740	367	−44.3	-----

Snow flurries; 9/10 St, SW.

#Feb. 11, 9:17 a.m.

H	P	T	R
14	1,019	−35.1	80
49	970	−20.0	55
118	882	−18.7	56
164	830	−19.6	55
195	798	−18.9	38
303	687	−19.6	33
324	668	−19.6	33
378	621	−22.2	32
434	574	−23.9	31
484	536	−26.9	30
528	506	−30.5	29
585	467	−30.1	23

Light ground fog and smoke; few As, unknown.

*Feb. 12, 8:45 a.m.

H	P	T	R
14	1,016	−33.1	67
46	971	−10.8	58
68	944	−11.5	56
84	924	−10.6	53
98	908	−11.1	51
143	857	−7.4	45
152	847	−7.3	43
171	825	−8.5	40
194	802	−8.9	37
208	787	−7.9	35
282	715	−13.0	32
314	685	−14.6	33
321	679	−14.0	34
334	668	−14.2	35
383	625	−17.7	41
448	573	−21.4	46
455	568	−21.3	46
476	552	−23.2	47
483	547	−22.8	47
527	515	−25.3	41

Light ground fog and smoke; few As, unknown.

#Feb. 12, 9:34 a.m.

H	P	T	R
14	1,016	−30.2	81
46	970	−12.6	49
107	896	−10.8	43
135	863	−10.0	39
166	830	−10.8	34
196	793	−11.0	32
245	747	−12.6	30
279	714	−14.8	30
337	663	−16.4	33
373	632	−18.6	36
425	583	−21.6	38
461	560	−24.0	37
502	532	−25.4	34
565	486	−28.0	32
621	448	−30.0	34
666	422	−33.9	29
780	357	−36.7	28
816	339	−38.1	27
967	273	−40.1	-----

Light ground fog and smoke; cloudless.

#Feb. 13, 9:21 a.m.

H	P	T	R
14	1,010	−26.8	84
72	934	−10.2	72
157	835	−6.2	62
165	827	−1.9	47
171	822	−2.1	38
193	800	−3.2	34
263	729	−3.0	32
321	678	−6.0	30
400	612	−7.2	30
456	570	−10.2	29
529	518	−13.2	28
580	484	−15.9	28
655	438	−19.2	28
761	380	−24.2	27
860	332	−27.4	26
907	312	−28.3	26
1,033	260	−36.4	25
1,178	211	−40.1	26
1,269	184	−39.4	26
1,473	137	−37.8	26

Light ground fog to S; cloudless.

*Feb. 15, 8:49 a.m.

H	P	T	R
14	1,012	−31.0	69
24	998	−15.6	71
42	975	−14.1	68
71	939	−12.9	63
115	886	−14.6	60
165	829	−14.9	61
171	822	−11.2	61
189	802	−10.6	56
217	773	−8.3	50
264	727	−10.2	41
318	678	−12.5	37
385	621	−16.8	33
443	575	−21.1	31
491	538	−26.0	30
523	515	−28.2	30

Moderate turbulence 420–1,650 m; cloudless; light ground fog and smoke.

#Feb. 15, 11:06 a.m.

H	P	T	R
14	1,012	−22.2	82
54	958	−14.0	58
102	900	−10.8	49
181	812	−10.8	51
233	758	−11.0	42
287	706	−10.3	39
325	672	−12.6	39
379	626	−14.1	33
401	607	−15.6	35
469	554	−22.4	31
542	502	−28.7	29
600	463	−33.4	29
691	407	−32.5	32
827	335	−38.4	32

Light ground fog and smoke; few As, unknown.

#Feb. 16, 8:31 a.m.

H	P	T	R
14	1,007	−30.6	79
22	997	−12.4	65
40	972	−10.6	55
97	903	−10.0	48
165	826	−8.3	44
234	755	−9.7	36
271	718	−10.3	30
328	668	−13.8	27
360	639	−16.6	26
403	604	−20.3	24
456	562	−24.5	23
528	508	−30.7	24
589	467	−35.4	21
694	401	−41.0	-----
773	356	−48.4	-----
882	301	−53.7	-----
978	258	−55.6	-----
1,038	236	−56.3	-----
1,115	219	−56.6	-----
1,410	131	−59.3	-----

Cloudless.

#Feb. 17, 9:18 a.m.

H	P	T	R
14	1,007	−28.9	80
86	913	−14.3	68
155	830	−16.1	57
216	766	−18.1	55
274	706	−21.3	49
371	620	−24.9	-----
446	560	−26.1	-----
532	497	−30.3	-----
557	478	−32.8	-----
685	399	−36.0	-----
734	372	−39.3	-----
776	349	−41.0	-----
877	302	−43.2	-----
924	281	−42.6	-----
974	261	−41.6	-----
1,013	246	−41.3	-----
1,091	220	−38.2	-----
1,148	206	−37.8	-----
1,233	178	−38.0	-----
1,337	154	−37.1	-----
1,470	127	−36.2	-----

Light ground fog and smoke; cloudless.

*Feb. 18, 8:48 a.m.

H	P	T	R
14	1,008	−33.9	74
35	978	−15.3	78
45	965	−14.5	76
60	946	−14.3	73
96	903	−15.9	69
106	891	−15.4	68
177	810	−19.5	65
246	737	−25.6	67
305	678	−31.2	72
354	633	−33.7	68
366	623	−32.1	67
433	567	−36.4	60
508	508	−38.8	53

Moderate turbulence, 1,770–4,330 m; few As, unknown.

#Feb. 18, 9:10 a.m.

H	P	T	R
14	1,008	−30.6	78
69	935	−15.0	76
89	910	−13.7	72
155	833	−15.4	62
232	752	−20.5	61
268	717	−21.2	62

Few As, unknown.

#Feb. 19, 9:07 a.m.

H	P	T	R
14	1,006	−19.3	40
97	900	−19.9	45
138	848	−20.0	48
201	782	−21.8	46

Few As, unknown.

#Feb. 20, 9:22 a.m.

H	P	T	R
14	992	−19.2	42
52	941	−16.9	48
95	889	−17.7	48
155	820	−14.8	51
222	750	−12.0	50
277	700	−13.1	45
313	666	−16.8	40
359	625	−19.4	40
429	568	−22.7	36
463	542	−24.9	32
521	501	−29.4	31
597	451	−31.5	27
726	375	−37.4	36
780	347	−41.9	-----
849	313	−42.6	-----

Few As, unknown.

*Feb. 21, 8:26 a.m.

H	P	T	R
14	990	−20.1	77
56	961	−12.4	72
62	928	−11.9	67
91	895	−8.5	63
129	851	−7.5	66
139	840	−4.0	66
159	818	−4.0	61
230	747	−10.9	67
304	679	−16.8	79
377	615	−20.7	72
385	609	−20.3	73
454	554	−24.7	70
517	508	−28.9	68

3/10 Ac, S, from 3,000 m; moderate turbulence from 1,390 m.

#Feb. 21, 11:11 a. m.

H	P	T	R
14	990	−15.8	64
51	943	−9.8	52
137	842	−7.7	49
178	799	−8.9	49
240	735	−14.4	53
327	653	−19.9	48
451	552	−22.9	46
509	510	−27.3	43
554	480	−27.9	40
650	420	−30.7	36
703	389	−33.7	35
782	348	−37.4	35
880	311	−38.0	33
987	258	−42.6	-----
1,196	190	−42.3	-----
1,266	171	−41.7	-----

Few Sc, E; 2/10 As, S.

#Feb. 22, 9:09 a. m.

H	P	T	R
14	976	−8.4	74
72	906	−3.3	49
91	884	−0.5	46
127	843	−1.3	45
176	796	−4.3	50
263	709	−9.6	54
347	634	−13.5	60
379	608	−15.9	62
473	535	−21.8	66
510	509	−25.0	66
569	469	−28.4	57
602	448	−31.0	53
638	426	−34.6	50
765	356	−37.0	40
834	322	−41.6	-----
987	257	−46.2	-----
1,031	240	−44.3	-----
1,195	188	−41.1	-----
1,270	168	−41.3	-----
1,313	158	−41.6	-----
1,346	151	−40.9	-----
1,391	141	−40.6	-----
1,458	128	−38.7	-----

Few Sc, unknown; 8/10 As, S.

#Feb. 23, 8:52 a. m.

H	P	T	R
14	981	−11.6	94
127	845	− 8.9	64
195	776	−13.0	71
286	687	−16.5	71
379	607	−15.5	72
429	566	−20.2	80
501	513	−24.7	80
571	467	−25.3	72
644	422	−27.0	64
700	390	−30.3	60
756	361	−33.9	57
843	318	−35.8	57
885	301	−39.3	57
959	269	−41.4	-----
1,025	244	−41.6	-----
1,081	225	−41.4	-----
1,152	203	−38.9	-----
1,182	194	−39.7	-----
1,246	177	−39.1	-----
1,289	166	−37.2	-----
1,321	158	−37.9	-----
1,480	126	−36.5	-----
1,535	116	−37.5	-----
1,583	108	−40.5	-----
1,734	87	−38.9	40
1,844	74	−40.4	-----

9/10 As, SE; 1/10 Ac, SE.

*Feb. 24, 8:39 a. m.

H	P	T	R
14	969	−9.5	100
22	958	−10.2	100
42	934	−11.3	100
61	912	−4.5	100
77	894	−1.2	86
95	873	−1.7	86
111	856	0.1	74
120	846	0.1	72
172	793	−4.1	74
254	714	−11.8	99
283	687	−13.7	100
314	659	−13.9	80
350	628	−16.3	82
357	622	−16.2	82
420	572	−21.0	83
465	538	−23.8	83
478	528	−23.8	78
509	507	−26.4	76

9/10 St, S, (¼ in. rough, opaque ice), 220–610 m; 5/10 St, unknown (¼ in. rough, hard, opaque ice) 2,540–2,830 m; moderate turbulence from 1,720 m.

#Feb. 24, 9:38 a. m.

H	P	T	R
14	969	−9.0	97
57	916	−7.7	97
110	855	−6.1	100
176	788	−6.8	96
270	697	−10.8	100
299	671	−12.6	100
326	646	−15.0	92
359	618	−17.9	90
445	551	−21.9	82
481	524	−22.8	74
566	467	−27.2	75
616	436	−29.9	75
677	400	−30.8	68

10/10 St, S.

#Feb. 25, 8:58 a. m.

H	P	T	R
14	976	−12.1	88
69	906	−13.3	84
148	818	−7.9	65
195	771	−3.8	61
222	745	−6.0	65
262	708	−7.7	64
310	664	−11.2	59
379	606	−16.0	59
423	569	−20.3	62
517	503	−26.9	63
619	436	−36.8	62

Light snow; 10/10 St, S.

#Feb. 26, 9:11 a. m.

H	P	T	R
14	992	−22.8	73
237	734	−14.6	80
319	659	−16.7	81
439	550	−22.7	72
482	528	−21.3	68
550	481	−23.9	61
622	436	−28.0	58
739	370	−35.6	55
826	327	−40.3	-----
883	299	−41.4	-----
929	279	−42.2	-----
964	266	−44.8	-----
1,061	230	−42.5	-----
1,127	209	−42.8	-----
1,188	191	−40.7	-----
1,292	164	−39.5	47
1,366	147	−39.6	44

Light snow; 10/10 St, S.

*Feb. 27, 8:44 a. m.

H	P	T	R
14	1,000	−20.4	72
33	975	−21.5	72
54	948	−21.2	72
72	925	−21.5	72
88	905	−17.1	74
123	865	−15.2	60
134	852	−12.3	56
169	813	−8.2	70
193	789	−7.5	89
217	763	−8.3	98
305	681	−13.4	98
326	663	−13.0	98
417	588	−17.6	90
434	575	−17.6	90
507	521	−21.2	90

Light snow; 10/10 St, SW, from 1,600 m.

#Feb. 27, 9:09 a. m.

H	P	T	R
14	1,001	−20.1	70
44	958	−20.5	65
82	913	−20.0	68
117	871	−17.3	58
169	813	−8.9	73
277	705	−12.6	85
337	651	−16.8	82
426	578	−20.7	75
488	532	−24.4	73
597	457	−28.4	68
693	400	−31.8	64
819	333	−35.8	58
884	303	−39.2	56
954	273	−46.0	-----
1,016	249	−45.7	-----
1,114	216	−46.7	-----
1,144	207	−46.7	-----
1,269	171	−46.1	-----
1,312	160	−46.7	-----
1,467	127	−45.4	-----
1,562	110	−45.4	-----

Light snow; 10/10 St,S W

#Feb. 28, 8:59 a. m.

H	P	T	R
14	983	−4.0	75
35	956	3.9	48
83	903	1.3	41
122	858	0.2	42
200	778	−6.3	65
311	674	−11.0	-----
365	626	−13.8	-----
406	593	−16.5	-----
468	547	−19.4	-----
507	520	−20.7	-----

9/10 Ac, SE.

#Mar. 1, 8:54 a. m.

H	P	T	R
14	982	−2.8	67
80	904	5.8	46
110	871	7.6	44
149	830	8.0	43
215	765	2.4	43
260	722	−2.1	43
355	640	−8.1	42
436	576	−16.0	42
492	535	−19.7	42
613	454	−23.8	42
687	410	−27.7	42
800	348	−36.0	42
936	286	−49.4	-----
1,000	259	−49.4	-----
1,096	224	−48.8	-----
1,183	197	−41.0	-----
1,374	149	−41.2	-----
1,563	113	−37.1	-----

9/10 Sc, NW; few As, W.

TABLE 2.—*Free-air data for significant levels obtained by means of airplane and radiosonde observations*—Continued

WINTER 1937-38.

[Times are for 150th meridian]

H=Height in decameters above sea level. T=Temperature in degree centigrade.
P=Pressure in millibars. R=Relative humidity (percent).

* Airplane observation.
# Radiosonde observation.

*Mar. 2, 8:14 a. m.

H	P	T	R
14	981	−11.8	85
23	970	5.5	60
34	956	7.5	45
80	905	6.1	40
85	899	5.2	40
97	886	5.1	39
136	845	1.9	38
157	823	1.2	38
164	816	1.9	37
172	807	6.0	35
177	803	5.7	34
190	789	6.7	31
219	761	6.0	28
268	717	2.4	24
316	676	−1.0	23
389	615	−7.4	22
463	559	−14.3	22
524	516	−18.6	21

Few As, unknown; 1/10 Cs, NW.

#Mar. 2, 8:45 a. m.

H	P	T	R
14	981	−7.2	77
83	900	7.0	43
155	821	4.8	39
295	690	3.0	28
364	636	0.4	28
484	544	−11.4	25
619	457	−16.1	23

Few As, unknown; 1/10 Cs, NW.

#March 3, 11:09 a. m.

H	P	T	R
14	990	−1.8	60
102	884	−2.0	59
130	852	−2.0	55
210	770	−4.6	55
231	749	−6.2	55
282	702	−7.2	58
380	617	−17.1	61
438	571	−21.0	59
536	500	−26.0	51
636	435	−27.9	47
778	357	−38.8	46
862	313	−47.6	-----
959	272	−51.4	-----
1,086	223	−52.1	-----
1,204	186	−54.3	-----
1,257	171	−52.9	-----
1,387	140	−53.8	-----
1,481	121	−52.6	-----
1,638	95	−51.4	-----

Few Ac, NW.

#Mar 4, 9:00 a. m.

H	P	T	R
14	997	−10.4	97
35	969	−4.9	65
120	871	−3.0	66
505	526	−18.8	62
587	471	−26.6	62
656	428	−30.7	61
724	389	−34.1	61
884	309	−41.9	-----

Light smoke; 1/10 Ac, N; 4/10 Ci, unknown.

*Mar. 5, 9:12 a. m.

H	P	T	R
14	1,006	−14.7	89
35	979	−3.9	83
46	966	−3.5	80
55	954	−2.7	79
65	942	−3.0	78
96	907	−2.3	71
106	896	−1.5	72
122	876	−1.6	63
163	832	−4.2	66
176	818	−3.6	59
230	763	−6.8	34
277	719	−10.0	30
320	680	−11.2	38
362	643	−14.0	24
442	578	−19.8	20
520	520	−25.9	23

Few Ac, unknown; 3/10 As, NW; 6/10 Ci, NW.

#Mar. 5, 9:25 a. m.

H	P	T	R
14	1,006	−10.8	98
56	952	−4.4	70
72	935	−4.0	68
117	882	−3.6	65
207	786	−5.0	44
241	750	−7.3	39
300	698	−9.7	31
401	609	−14.5	24
449	572	−19.0	22
537	508	−24.2	19
610	460	−26.3	24
710	399	−31.3	22
836	334	−36.8	22
934	290	−42.4	-----
1,012	258	−47.0	-----

Few Ac, unknown; 3/10 As, NW; 6/10 Ci, NW

#Mar. 6, 10:10 a. m.

H	P	T	R
14	1,006	−7.8	96
198	797	−9.3	35
255	734	−8.4	35
500	531	−24.1	31
617	450	−30.1	30
677	414	−38.1	30
996	259	−42.6	-----
1,093	225	−42.3	-----
1,144	208	−38.6	-----
1,258	177	−39.1	-----

Light smoke and fog; few As, unknown.

#Mar. 7, 8:12 a. m.

H	P	T	R
14	1,001	−12.7	96
130	860	−1.4	38
247	740	−7.4	29
326	668	−14.8	26
401	604	−21.8	30
479	543	−24.9	30
614	452	−29.4	31
559	486	−27.2	33

Cloudless.

*Mar. 8, 8:15 a. m.

H	P	T	R
14	993	−14.3	85
20	986	−6.9	72
34	969	−2.0	56
58	939	−1.7	52
96	896	−5.1	56
114	875	−5.3	53
119	869	−4.6	51
167	816	−7.4	46
199	784	−9.5	46
214	769	−9.4	42
270	714	−12.0	42
334	657	−16.4	44
396	605	−21.4	40
448	563	−26.2	41
511	516	−30.5	40

Few Sc, W.

#Mar. 8, 11:04 a. m.

H	P	T	R
14	992	−5.6	65
111	875	−3.0	48
160	822	−4.6	47
205	778	−8.8	44
282	701	−11.6	34
349	642	−16.0	35
462	552	−21.4	34
562	480	−28.0	31
653	424	−30.2	33
706	393	−34.8	29
738	376	−36.8	27
781	353	−37.8	25
873	308	−39.6	26
962	272	−39.8	26
1,030	246	−39.8	26
1,066	233	−36.8	25
1,124	215	−36.8	24
1,145	208	−36.3	23

Few Sc, W.

#Mar. 9, 8:46 a. m.

H	P	T	R
14	981	−10.9	83
300	672	−16.1	46
342	634	−18.7	47
471	531	−26.1	41
601	443	−35.6	39
842	313	−42.0	-----

Light fog and smoke; Few As, unknown.

#Mar. 10, 8:28 a. m.

H	P	T	R
14	975	−7.9	70
61	918	−5.4	61
102	870	−6.3	66
117	853	−7.1	68
188	779	−9.6	68
246	722	−12.6	73
290	682	−14.0	76
345	633	−16.6	76
395	591	−22.0	75
476	530	−23.6	69
574	463	−28.0	68
657	413	−33.3	68
720	377	−33.7	67
770	351	−35.6	65
803	335	−38.5	64
899	291	−39.6	63
959	267	−39.6	63
1,014	246	−37.8	62
1,081	223	−35.2	62
1,169	197	−35.0	61
1,214	185	−35.0	60
1,286	167	−33.2	60
1,395	143	−33.2	59
1,466	129	−32.2	57
1,522	119	−32.0	56
1,609	105	−30.8	55
1,705	92	−30.8	55
1,794	81	−30.6	52
1,880	72	−30.3	53

8/10 As, unknown.

#Mar. 11, 8:30 a. m.

H	P	T	R
14	980	−7.8	94
340	634	−20.6	74
765	348	−45.7	-----
829	316	−42.2	-----
898	286	−41.1	-----
998	247	−41.5	-----

Light snow; 10/10 St, unknown.

*Mar. 12, 8:28 a. m.

H	P	T	R
14	978	−6.6	87
21	970	−5.3	80
28	962	−5.4	77
68	912	−8.3	85
114	859	−12.0	100
138	832	−13.8	95
146	824	−12.6	89
163	806	−13.0	86
197	770	−14.8	82
244	723	−18.6	84
295	676	−22.6	84
361	617	−28.2	89
456	539	−34.2	82
524	489	−39.4	80

10/10 Sc, SE, 1,140-1,630 m; heavy haze, from 1840 m.

#Mar. 12, 8:45 a. m.

H	P	T	R
14	978	−5.5	85
330	643	−20.0	71
414	572	−25.5	70
463	535	−30.2	70
553	472	−34.4	71
665	403	−39.6	67
711	376	−42.2	-----
798	331	−46.0	-----
882	291	−47.4	-----
947	263	−46.1	-----
996	245	−43.5	-----
1,151	195	−42.6	-----
1,219	176	−38.7	-----
1,300	157	−37.4	-----

10/10 Sc, SE.

#Mar. 13, 8:25 a. m.

H	P	T	R
14	968	−12.9	86
92	875	−6.7	55
169	791	−10.8	54
229	731	−14.6	50
301	661	−19.3	48
368	605	−23.0	44
452	538	−28.8	40
519	491	−28.5	39
569	457	−29.0	37
610	433	−29.2	39
671	397	−32.8	40
736	360	−34.4	39
798	331	−38.8	38
868	298	−40.4	36
938	270	−40.2	36
992	250	−40.6	36
1,080	219	−39.0	37
1 141	201	−38.1	37
1,221	179	−35.8	36
1,269	167	−34.0	34
1,344	148	−33.0	34
1,455	128	−32.4	32
1,525	116	−30.7	31
1,610	103	−29.8	31
1,682	93	−28.0	31
1,754	84	−34.6	24

Few As, unknown; Few Cs, unknown.

#Mar. 14, 8:08 a. m.

H	P	T	R
14	966	−15.2	88
75	890	−19.7	-----
133	821	−21.2	38
181	770	−21.2	40
371	594	−21.7	44
466	520	−29.0	44
539	472	−32.8	41

Light smoke; Few As, NE.

#Mar. 15, 8:35 a. m.

H	P	T	R
14	976	−14.2	82
103	867	−13.0	58
167	798	−13.4	67
228	734	−16.0	76
434	556	−22.8	72
509	504	−23.7	65

Snow flurries; 10/10 St, NE.

#Mar. 15, 10:40 p. m.

H	P	T	R
14	977	−12.6	88
54	926	−17.4	79
88	884	−18.7	82
111	856	−19.4	85
179	782	−15.6	78
232	728	−18.2	73
274	688	−22.8	74
332	636	−27.4	80
362	608	−31.4	80
398	579	−34.5	75
439	544	−39.0	67
492	506	−45.6	67
526	480	−48.5	68
559	456	−51.0	67
601	428	−54.2	66
645	400	−54.4	63

Light snow; 10/10 St, unknown.

TABLE 3.—*Free-air data for standard levels above sea level obtained by means of airplane and pilot-balloon observations, winter 1936–37*

[For times of ascents see table 1]

P—Pressure in millibars.
T—Temperature in degrees centigrade.
R—Relative humidity.
D—Wind direction.
V—Wind velocity, meters per second.

SEPTEMBER 1936

MORNING OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
15	-----	-----	---	calm	0	---	-----	---	e.	6	---	-----	---	se.	7	---	-----	---	sse.	2	---	-----	---	sw.	3	---	-----	---	wnw	9	---	-----	---	-----	---
16	-----	-----	---	calm	0	---	-----	---	ese.	4	---	-----	---	se.	6	---	-----	---	s.	4	---	-----	---	sse.	3	---	-----	---	w.	6	---	-----	---	w.	4
17	992	4.3	87	e.	1	950	7.6	66	se.	4	894	6.3	82	sw.	4	790	−1.1	94	wsw.	4	694	−6.0	94	w.	5	610	−12.1	98	-----	---	534	−14.4	76	-----	---
18	986	6.6	91	calm	0	944	8.7	76	e.	6	889	6.5	80	ene.	4	786	0.7	84	wsw.	4	692	−5.1	75	-----	---	608	−11.4	76	-----	---	533	−18.0	70	-----	---
19	985	−1.0	88	ese.	1	943	4.9	63	ene.	9	886	4.9	72	ese.	10	785	1.6	67	ese.	10	691	−5.4	73	ese.	6	608	−12.3	70	ese.	4	533	−19.3	59	ese.	6
20	981	−2.0	100	ese.	1	942	4.9	64	e.	8	885	4.5	73	ese.	9	781	−1.3	84	ene.	10	688	−5.3	57	ene.	5	605	−12.7	72	ese.	4	530	−20.0	81	se.	8
21	980	−2.4	100	n.	1	938	6.0	58	ene.	5	883	4.4	73	ne.	2	784	1.0	64	se.	1	690	−5.6	70	s.	6	605	−11.4	56	s.	4	532	−18.2	80	-----	---
22	990	−2.9	100	calm	0	945	6.0	70	ene.	3	889	5.2	64	wnw.	2	784	0.1	79	w.	4	693	−7.3	90	wnw.	6	608	−14.0	91	nw.	4	534	−19.7	84	ssw.	2
23	995	−3.7	95	calm	0	952	9.0	57	ene.	4	896	7.1	65	ne.	3	791	−0.4	80	ese.	1	696	−8.6	97	calm	0	612	−11.2	64	ne.	3	535	−21.0	74	ese.	2
24	998	−5.0	94	n.	1	954	4.5	62	e.	1	897	4.4	44	n.	3	792	−1.5	49	n.	5	698	−9.3	77	n.	4	611	−14.6	69	ssw.	1	536	−21.1	66	sw.	3
25	995	6.0	58	e.	8	953	9.6	43	e.	16	899	6.0	52	se.	14	793	1.2	45	se.	7	700	−5.4	90	se.	12	616	−11.6	21	se.	9	539	−16.7	18	-----	---
26	984	8.0	70	n.	2	942	11.2	55	n.	2	889	9.4	53	ese.	4	785	1.8	73	ssw.	4	693	−6.1	97	ssw.	11	609	−11.3	82	sw.	7	535	−19.0	90	-----	---
27	1,008	0.6	95	ene.	1	954	4.6	73	sw.	8	907	1.8	81	wsw.	11	800	−5.3	93	wsw.	17	705	−9.9	76	wsw.	19	617	−16.0	75	wsw.	16	539	−24.1	66	-----	---
28	1,012	3.3	96	e.	2	965	6.4	66	wsw.	4	908	3.7	81	wsw.	8	802	−3.1	57	w.	13	706	−9.9	89	-----	---	622	−13.8	78	-----	---	544	−20.2	36	-----	---
29	1,008	−2.3	100	w.	1	962	7.2	51	e.	7	905	5.4	50	se.	7	802	3.8	30	sw.	1	707	−2.4	32	w.	6	622	−9.1	35	wsw.	10	545	−13.6	52	w.	17
30	1,002	−0.5	71	ene.	4	958	9.5	34	e.	8	903	8.0	33	e.	8	800	6.8	35	e.	6	705	−0.3	57	ese.	2	623	−6.5	68	sse.	7	546	−11.5	25	w.	8

AFTERNOON OBSERVATIONS

15	-----	-----	---	sse.	3	---	-----	---	ese.	3	---	-----	---	s.	3	---	-----	---	sw.	5	---	-----	---	w.	7	---	-----	---	w.	7	---	-----	---	-----	---
16	992	14.3	48	e.	4	950	13.3	50	se.	2	894	8.5	58	se.	5	793	−0.5	82	s.	5	698	−2.9	46	sse.	4	614	−8.3	86	ssw.	4	540	−13.1	78	sw.	4
17	988	12.6	68	ne.	2	945	11.4	57	e.	2	890	8.0	61	sse.	2	787	1.0	94	w.	3	695	−4.0	96	-----	---	610	−10.0	98	-----	---	536	−15.6	94	-----	---
18	984	12.8	50	ene.	3	945	10.4	58	ene.	3	890	7.6	69	ene.	4	788	1.3	88	s.	5	694	−5.1	88	-----	---	607	−10.4	56	-----	---	533	−18.2	51	-----	---
19	985	12.0	48	ne.	5	944	9.3	54	ene.	7	886	7.3	64	ese.	7	785	0.8	66	ese.	8	694	−6.1	77	se.	5	609	−13.7	94	ese.	7	534	−20.1	70	e.	7
20	978	13.0	45	e.	8	936	10.8	51	e.	10	881	6.6	62	e.	6	783	0.0	75	e.	10	686	−5.7	59	ese.	10	603	−12.2	91	-----	---	529	−17.9	77	-----	---
21	983	13.6	43	ssw.	1	942	10.0	48	ne.	1	887	5.9	61	n.	3	736	0.0	78	n.	2	695	−6.8	64	wsw.	6	611	−12.8	65	-----	---	535	−19.2	87	-----	---
22	993	11.2	49	calm	0	950	10.3	52	calm	0	892	7.2	61	wsw.	2	791	0.3	77	w.	5	696	−7.7	92	w.	4	614	−12.6	72	sw.	2	538	−19.8	61	wsw.	4
23	992	11.0	55	calm	0	951	11.6	47	ene.	3	895	7.1	54	ene.	3	791	−1.3	81	nne.	2	696	−9.5	97	nne.	4	613	−13.7	52	-----	---	536	−21.4	62	-----	---
24	1,001	10.8	49	e.	1	959	9.5	47	sw.	1	902	6.2	45	n.	3	798	−0.8	60	wnw.	4	701	−8.8	66	nnw.	2	614	−14.9	60	wsw.	4	538	−21.4	54	wsw.	8
25	985	13.2	50	ese.	8	945	11.6	49	ese.	14	889	8.5	57	ese.	12	785	1.2	72	s.	13	694	−5.3	94	sw.	15	610	−11.4	80	ssw.	12	534	−18.0	84	-----	---
26	994	8.3	82	calm	0	951	5.7	90	sse.	4	894	2.4	100	s.	5	789	−2.6	87	ssw.	9	696	−8.5	85	-----	---	610	−13.9	77	-----	---	-----	-----	---	-----	---
27	1,011	8.6	81	-----	---	965	8.9	70	-----	---	910	4.9	78	-----	---	805	−2.7	100	-----	---	708	−9.2	100	-----	---	622	−13.3	73	-----	---	546	−19.9	72	-----	---
28	1,011	11.8	51	sw.	2	966	8.3	58	sw.	2	910	4.0	69	w.	5	805	−3.2	83	w.	10	709	−6.5	37	w.	9	623	−11.6	24	wnw.	11	546	−18.3	20	wnw.	12
29	1,004	14.0	38	e.	3	961	11.5	38	e.	3	904	9.2	32	se.	2	803	5.2	22	ssw.	4	707	−0.2	48	wsw.	6	624	−7.0	84	w.	12	547	−12.4	72	w.	12
30	996	14.7	37	e.	3	954	13.0	34	ene.	7	898	9.8	34	e.	11	794	6.6	27	e.	7	700	−0.6	50	sse.	5	617	−5.0	23	ssw.	3	543	−12.4	20	wsw.	6

ADDENDA, MORNING OBSERVATIONS

Date	6,000 meters		7,000 meters	
	D	V	D	V
16	nw.	6	-----	-----
19	e.	6	-----	-----
22	n.	1	-----	-----
23	se.	4	---	---
30	wsw.	8	wsw.	12

ADDENDA, AFTERNOON OBSERVATIONS

Date	6,000 meters		7,000 meters		8,000 meters		10,000 meters	
	D	V	D	V	D	V	D	V
16	ssw.	4	wsw.	1	sw.	5	-----	-----
19	ese.	6	---	---	---	---	---	---
22	ssw.	2	sse.	2	ese.	5	s.	4
24	wsw.	12	wsw.	13	wsw.	13	-----	-----
28	wnw.	24	wnw.	28	---	---	---	---
30	wsw.	7	wsw.	11	wsw.	11	wsw.	14

TABLE 3.—*Free-air data for standard levels above sea level obtained by means of airplane and pilot-balloon observations, winter 1936–37*—Continued

OCTOBER 1936

MORNING OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	992	−2.4	87	e.	4	949	6.2	47	ene.	9	894	6.7	35	ese.	10	794	6.6	21	e.	12	701	−0.4	21	ese.	8	616	−4.8	18	ene.	2	543	−12.0	18	ese.	6
2	987	−3.8	77	e.	1	945	5.0	53	e.	8	891	4.0	54	e.	16	792	2.6	48	ne.	5	699	−4.2	64	e.	2	616	−11.8	72	s.	2	542	−15.7	50		
3	975	−4.0	82	ene.	1	930	2.3	56	ene.	7	874	1.5	67	e.	9	772	−2.0	80	e.	11	681	−6.9	65	ene.	10	598	−12.1	55			525	−18.5	57		
4	987	−8.0	74	ene.	2	942	−4.3	59	ene.	8	885	−4.7	63	e.	10	780	−4.8	42	ne.	6	684	−10.7	26	w.	3	600	−16.1	32	w.	9	525	−21.9	40	w.	7
5	980	−3.3	46	ne.	2	935	−2.7	42	ene.	8	880	−1.4	44	e.	6	778	−3.4	84	e.	3	683	−9.1	78			600	−15.1	69			525	−19.2	36		
6	975	−4.2	60	nne.	4	931	−5.8	61	ne.	8	874	−8.4	70	ene.	3	766	−9.2	74	nnw.	7	675	−12.1	73			591	−16.8	55			517	−22.4	32		
7	992	−13.0	69	ne.	1	944	−10.0	56	ene.	7	885	−10.0	65	e.	8	780	−10.7	76	ene.	2	686	−12.4	30	wsw.	6	603	−17.0	20	wsw.	13	526	−24.1	30	wsw.	16
8	1,000	−18.5	85	calm	0	953	−7.1	76	e.	5	892	−6.0	84	ese.	6	784	−5.5	90	wsw.	8	687	−9.5	29	wsw.	12	605	−14.7	27	wsw.	15	531	−22.0	30	wsw.	28
9	987	−2.7	87	n.	1	944	5.8	66	ese.	6	889	7.0	57	s.	5	786	0.4	72	sw.	17	693	−6.8	91			610	−13.4	90			533	−20.7	88		
10	984	2.1	98			940	4.2	98			883	3.0	95			780	−1.9	100			686	−6.4	98			604	−11.7	92			530	−18.4	90		
11	990	−4.8	100	wsw.	1	944	6.3	70	nne.	3	889	4.5	65	ne.	4	785	−2.1	78	ene.	2	690	−8.6	74	e.	4	607	−14.8	76	se.	7	532	−21.2	50	ssw.	5
12	998	−1.0	100	calm	0	951	−0.3	100	e.	6	895	0.0	91	se.	8	790	−5.8	86	ssw.	8	695	−13.0	95	ssw.	13	611	−19.0	54	sw.	13	532	−26.4	42	sw.	18
13	985	4.2	62	ene.	5	941	5.3	57	se.	11	885	4.0	60	sse.	8	781	−3.0	78	ssw.	14	688	−9.2	92	sw.	16	604	−14.6	90			529	−21.0	78		
14	973	1.0	97			930	1.0	98			873	1.6	97			770	−2.7	94			680	−6.7	82			595	−12.5	86			523	−19.3	81		
15	1,010	−5.1	97	sw.	4	962	−3.6	95	w.	5	902	−6.6	99	w.	5	794	−13.1	98			697	−16.5	67			610	−22.0	50			531	−26.4	86		
16	1,010	−5.8	95	nne.	1	965	−3.8	92	e.	3	905	−7.8	90	se.	4	795	−12.0	74			698	−15.0	72			610	−21.0	49			533	−26.4	36		
17	1,001	−12.8	95	ese.	3	955	−3.3	52	e.	10	896	−5.0	54	se.	12	789	−5.0	50	sse.	8	695	−7.2	45	sw.	6	611	−12.3	97	sw.	6	535	−16.9	97		
18	998	−2.3	98	calm	0	952	−1.8	85	e.	5	894	0.2	81	ssw.	5	791	−2.6	100	w.	10	700	−5.4	84	wsw.	13	614	−12.8	96	wsw.	12	538	−19.1	92	wsw.	19
19	994	1.3	97			950	1.8	96			894	0.8	88			788	−4.2	86			694	−10.0	95			608	−14.0	43			529	−19.5	29		
20	994	−1.8	100	nnw.	1	950	3.1	80	se.	5	893	2.7	70	sw.	8	786	−3.5	87	ssw.	8	693	−9.7	88			608	−12.2	95			534	−19.1	93		
21	990	−1.5	100			945	2.6	80			888	0.1	89			786	−3.5	84			693	−8.1	80			608	−12.5	26			533	−18.6	24		
22	983	−0.3	99	n.	2	938	7.1	61	ese.	6	882	7.0	54	s.	5	779	0.0	68	ssw.	12	687	−6.8	84	ssw.	3	603	−12.9	92			528	−19.4	90		
23	990	−1.5	100	e.	1	945	0.5	88	s.	2	887	−2.0	94	sw.	4	782	−8.5	74	w.	4	688	−14.5	98	wsw.	8	603	−20.8	75			525	−28.2	64		
24	1,004	−13.8	89	wsw.	1	956	−9.1	82	wnw.	3	896	−12.7	84	wnw.	4	787	−17.7	77	nw.	4	687	−18.8	40	nw.	12	602	−21.4	29	nw.	19	524	−26.6	25	nw.	23
25	1,006	−9.8	76	ne.	1	960	−6.3	58	ese.	4	901	−5.0	52	sse.	3	791	−7.8	92	w.	6	695	−11.5	99	w.	8	607	−17.2	91			532	−24.5	91		
26	1,007	−6.0	91	nnw.	2	957	−2.3	70	ese.	4	900	1.7	60	wsw.	4	794	−4.0	81	sw.	9	700	−10.7	91			612	−17.2	69			535	−22.1	51		
Mean	996	−4.5	87			947	−0.3	72			889	−0.9	71			785	−4.7	76			691	−9.6	71			606	−15.0	63			530	−21.1	57		

AFTERNOON OBSERVATIONS

1	988	10.0	38	ne.	4	945	6.5	45	ene.	4	890	4.7	48	ese.	10	788	2.9	50	ese.	12	697	−2.1	31	se.	6	615	−9.3	40	ese.	6	540	−15.8	44	ese.	7
2	984	8.9	37	ene.	5	940	6.0	42	ene.	4	884	6.0	48	ese.	7	782	−0.1	65	ese.	18	690	−5.0	63	ne.	5	607	−10.0	65	e.	4	533	−15.9	59	w.	5
3	979	5.5	44	e.	4	934	3.3	46	ne.	4	879	1.6	58	e.	5	776	−4.4	100	ene.	10	685	−6.8	29			601	−13.6	21			526	−19.6	18		
4	987	5.2	33	ese.	2	943	1.0	32	ene.	4	887	−3.4	34	e.	5	781	−6.0	30	ese.	2	685	−10.2	29	wsw.	4	602	−15.4	37	w.	10	528	−22.6	36	w.	8
5				ene.	2				ene.	8				e.	12				ese.	7				e.	7										
6	984	−4.0	44	ne.	4	937	−7.0	50	ene.	2	880	−10.0	62	nne.	2	772	−11.2	80	wnw.	4	680	−12.5	45	w.	10	596	−17.0	25	wsw.	15	522	−22.2	23	wsw.	16
7	996	−5.2	40	se.	3	950	−6.6	44	ene.	2	892	−8.2	52	ene.	5	785	−9.7	77	ne.	1	690	−12.8	43	wsw.	7	604	−18.2	81	wsw.	18	528	−25.2	75	wsw.	20
8	992	−0.5	47	ese.	1	947	−0.8	48	ene.	6	891	0.9	60	se.	9	785	−2.5	88	sw.	10	692	−8.5	93	wsw.	12	608	−13.5	93	wsw.	14	533	−19.5	91	wsw.	18
9	988	8.0	80	calm	0	945	10.0	56	ese.	8	890	9.0	49	s.	7	789	1.8	57	ssw.	16	696	−5.7	65	ssw.	6	611	−13.5	65	sw.	13	535	−19.4	55	sw.	16
10	993	1.7	89			948	0.4	99			891	2.9	94			788	−1.4	87			693	−7.4	88			608	−14.3	91			533	−20.0	65		
11	987	2.6	92	sw.	2	944	5.5	70	ene.	4	889	3.9	68	ene.	7	787	−2.0	80	ene.	6	693	−7.7	63	e.	5	608	−13.7	96	sse.	6	533	−18.7	95		
14	994	5.0	84	calm	0	950	3.1	87	e.	6	891	1.3	59	se.	8	788	−4.7	54	ssw.	8	693	−11.9	53	ssw.	13	607	−16.2	30	sw.	13	530	−23.2	27	sw.	18
15	978	9.2	55	ene.	4	935	9.0	58	e.	7	880	5.4	66	se.	10	777	0.1	70	ssw.	9	684	−5.6	65	ssw.	10	602	−12.1	59	ssw.	12	529	−18.9	75	ssw.	14
17	1,002	−1.5	92			955	−2.7	92			898	−6.9	97			789	−11.0	53			694	−15.2	65			608	−19.0	93			532	−25.7	94		
18	1,011	−1.9	97	sse.	1	965	−3.1	100	wsw.	3	904	−7.0	100	w.	6	794	−13.4	98			696	−18.0	80			607	−23.3	74			528	−28.0	90		
19	1,008	−2.5	79	n.	2	963	−3.3	77	ene.	6	904	−6.8	79	ese.	6	794	−9.4	68	ene.	1	697	−13.6	44	s.	1	611	−18.1	32	wsw.	5	535	−22.0	28	w.	13
20	994	−3.0	74	ene.	4	947	−1.3	65	e.	11	889	−5.0	70	se.	12	786	−0.5	68	sse.	5	694	−4.2	90	sw.	9	610	−10.3	100	sw.	11	536	−16.4	80	wsw.	11
21	998	0.2	88	calm	0	952	2.5	72	e.	5	897	5.0	64	ssw.	5	792	0.5	74	w.	10	698	−5.5	99	wsw.	13	614	−12.5	79	wsw.	12	538	−18.1	72	wsw.	19
23	998	2.4	95			954	1.8	99			898	1.0	90			793	−2.9	88			699	−9.7	96			613	−12.9	42			537	−17.0	29		
24	993	2.3	93	calm	0	948	4.0	70	ese.	3	892	3.1	64	sse.	4	787	−3.6	100	sw.	10	693	−8.2	100	wsw.	10	610	−12.5	93			535	−18.7	88		
25	989	−0.4	96			944	2.8	79			888	0.9	90			786	−3.1	92			692	−7.7	94			609	−13.0	83			534	−17.7	33		
26	977	5.5	80	nne.	4	934	8.6	66	e.	7	879	5.6	67	e.	5	778	−0.4	72	s.	11	686	−7.4	94	ssw.	14	603	−13.2	100			527	−19.3	100		
28	997	−4.0	90	e.	1	950	−6.4	89	s.	2	891	−10.6	98	sw.	4	785	−12.7	51	w.	4	689	−15.6	40			603	−24.0	73			526	−31.8	85		
29	1,004	−7.7	86	ene.	1	956	−9.6	85	ese.	3	896	−12.0	89	e.	1	789	−13.0	47	nnw.	4	691	−15.8	32	nnw.	8	604	−20.0	27	wnw.	14	526	−25.0	34	wnw.	25
30	1,007	−4.7	61	ene.	2	960	−4.4	60	ese.	2	901	−3.2	90	s.	4	795	−3.0	88	w.	8	700	−10.6	92	w.	10	612	−17.3	96			535	−21.6	58		
31	1,006	−2.0	89	sw.	1	958	0.0	73	e.	3	901	1.6	62	sw.	3	796	−4.2	90	w.	6	701	−9.4	95	sw.	9	614	−15.4	97			538	−21.5	90		
Mean	993	1.2	72			948	0.8	68			891	−0.8	70			786	−4.6	73			692	−9.6	67			608	−15.2	68			532	−21.0	62		

ADDENDA, MORNING OBSERVATIONS

Date	6,000 meters	
	D	V
1	se.	4
11	ssw.	12

ADDENDA, AFTERNOON OBSERVATIONS

Date	6,000 meters		7,000 meters		8,000 meters		10,000 meters		12,000 meters	
	D	V	D	V	D	V	D	V	D	V
1	ese.	5	ese.	8	e.	8	e.	6		
2	w.	2	ssw.	4	s.	1	wsw.	3	w.	5
4	w.	8	w.	12	w.	15	w.	11		
7	wsw.	20	wsw.	26						
8	wsw.	23	wsw.	30	wsw.	37				
14	sw.	20								
15	sw.	19								
19	wnw.	26	w.	34						
20	wsw.	15	wsw.	21	w.	27				
21	wsw.	19	sw.	10						
29	wnw.	33	wnw.	38						

TABLE 3.—*Free-air data for standard levels above sea level obtained by means of airplane and pilot-balloon observations, winter 1936–37*—Continued

NOVEMBER 1936

MORNING OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	1,000	−4.7	97	nne.	1	955	3.8	70	e.	10	900	3.2	60	ese.	12	793	−1.0	75	sse.	4	690	−4.4	54	s.	4	614	−9.7	82	wsw.	10	540	−12.8	91	w.	12
2	990	1.1	93	ene.	3	944	2.5	92	ene.	10	888	2.2	88	ese.	7	784	−0.3	93	s.	4	690	−5.3	96	sw.	9	608	−7.8	97			534	−13.1	99		
3	1,000	−4.6	86			952	−5.5	91			892	−3.7	100			787	−5.0	100			692	−8.3	100			607	−13.0	99			533	−20.6	95		
4	1,009	−7.5	87	calm.	0	962	−2.4	64	ese.	5	902	−5.0	80	ese.	10	796	−4.6	80	ssw.	4	702	−8.5	50	s.	5	615	−14.0	36	s.	6	538	−21.6	70		
5	1,002	−14.3	98	nnw.	2	954	−3.0	68	e.	4	896	−0.5	56	sse.	5	794	−5.3	66	ssw.	6	697	−7.8	35	wsw.	6	611	−12.5	48	w.	10	536	−17.6	67	w.	13
6	999	−6.5	100	sse.	1	954	−3.4	73	se.	3	895	−0.6	89	e.	2	790	−5.2	96	sw.	4	696	−8.7	89			609	−15.4	94			534	−21.4	46		
7	990	−14.5	100	nw.	1	944	−5.5	89	ese.	4	885	−2.4	88	ese.	2	779	−4.5	80	s.	2	685	−10.5	75	sw.	6	601	−18.0	73			524	−26.4	69		
8	980	−3.2	94	e.	1	935	0.3	63	ne.	4	881	−1.0	79			775	−4.4	98			683	−9.0	89			590	−16.2	92							
10	985	−10.4	73	ne.	2	940	−8.7	85	ene.	3	881	−9.1	100	e.	5	774	−9.8	94			680	−15.6	82			595	−23.5	91			518	−29.4	70		
11	975	−14.3	93	calm.	0	929	−11.7	86	ene.	3	871	−10.3	90	ene.	5	763	−8.2	83	e.	4	671	−14.3	94	s.	2	587	−21.9	100			512	−29.2	72		
12	983	−18.2	90	calm.	0	934	−16.2	90	ne.	1	873	−18.0	89	ene.	2	762	−16.6	99	ne.	2	666	−18.0	62			583	−23.2	45			507	−30.8	46		
14	1,002	−19.1	70	ene.	1	953	−17.5	70	ene.	4	891	−18.3	72	ene.	5	783	−15.5	84	ese.	6	685	−19.5	70			599	−22.7	44			522	−28.5	37		
15	977	−17.3	89			930	−17.5	91			871	−16.6	95			765	−4.1	70			674	−9.3	70			592	−15.8	75			517	−23.9	78		
16	997	−29.8	50	ese.	3	949	−19.2	57	se.	3	886	−19.1	67	wsw.	3	779	−13.4	70	sw.	18	684	−15.6	66	sw.	22	598	−21.8	66			523	−27.0	54		
17	991	−26.9	62	sw.	2	941	−23.5	68	nnw.	2	881	−23.5	71	nne.	1	771	−16.8	82	sse.	2	676	−11.4	98			592	−17.4	97			518	−22.9	87		
18	980	−23.7	78	ne.	1	930	−20.1	79	nne.	3	869	−22.0	81	ene.	5	760	−6.2	98	e.	6	668	−10.0	87			587	−15.6	48			515	−24.0	50		
19	995	−23.7	80	ese.	2	946	−22.9	84	e.	2	885	−22.7	88	ssw.	2	775	−16.8	89			680	−21.3	90			592	−26.6	87			515	−31.9	74		
20	988	−21.5	62	ese.	2	940	−14.0	71	ne.	2	884	−3.5	73	sse.	5	779	−8.0	84	s.	8	684	−14.6	80			598	−21.7	60			522	−31.2	60		
21	974	−7.0	92	ese.	1	929	1.8	62	sse.	5	873	0.7	56	sw.	9	770	−4.7	54	sw.	10	677	−12.5	70	sw.	15	594	−19.9	81			518	−28.1	80		
22	966	2.8	62	e.	4	924	3.4	61	se.	10	869	3.7	56	sse.	8	768	−3.0	58	s.	14	675	−9.9	57	ssw.	17	594	−16.6	48			518	−25.3	42		
23	1,004	−2.5	93	sse.	4	961	0.0	60	wsw.	8	903	−3.1	72	w.	11	795	−9.5	80	sw.	11	697	−17.3	93			610	−23.0	75			531	−27.0	45		
24	993	−1.0	84	e.	2	948	5.5	64	sse.	6	891	4.0	53	ssw.	10	788	−3.4	72	sw.	14	694	−10.2	88	sw.	4	609	−13.7	92			534	−18.0	90		
25	980	−0.4	100	s.	4	936	14.0	38	ese.	12	882	12.1	33	se.	8	782	4.9	38	s.	16				ssw.	23										
26	1,004	−0.1	68	w.	7	957	−1.5	69	w.	11	900	−4.9	75	w.	16	791	−9.6	93	wsw.	17	695	−17.0	92	w.	22	608	−21.3	68			529	−29.5	51		
27	1,007	−16.9	100	nw.	1	960	−2.5	69	e.	5	902	−3.0	54	e.	5	796	−8.1	48	e.	4	697	−14.0	55	s.	2	610	−17.4	36	wsw.	10	534	−22.2	27		
28	999	−21.8	93	n.	2	953	−5.4	60	e.	7	895	−4.7	57	e.	5	787	−7.2	44	ene.	5	692	−9.0	27	w.	9	608	−14.9	27			533	−22.0	32		
29	999	−13.4	97	calm.	0	954	−4.0	75	ene.	7	895	−3.2	82	e.	5	793	−6.0	94	sw.	10	696	−11.0	89			611	−16.5	70			534	−23.4	54		
30	994	−13.9	98			947	−10.0	100			886	−7.6	100			781	−8.3	99			686	−14.0	97			601	−19.3	94			525	−26.5	92		
Means	992	−11.9	85			945	−6.6	73			887	−6.5	75			781	−7.1	79			686	−11.6	74			601	−17.2	69			526	−23.8	63		

AFTERNOON OBSERVATIONS

1	995	1.2	80	n.	1	950	4.5	64	e.	11	891	2.6	70	se.	11	790	−0.2	68	sse.	7	696	−3.8	88	sw.	4	610	−6.8	75	wsw.	6	537	−11.5	87	wsw.	11
2	991	0.1	91	ene.	3	947	−0.5	93	ene.	10	889	−0.7	100	ese.	7	784	−2.1	98	s.	4				sw.	9										
3	1,002	−4.1	68			958	−4.5	70			898	−4.6	91			790	−5.0	99			694	−8.7	100			610	−13.5	83			535	−21.7	93		
4	1,009	−4.0	60	n.	1	963	−2.3	64	e.	5	904	−5.0	78	se.	7	797	−5.1	98	s.	4	700	−9.0	35	ssw.	6	613	−14.9	44	sse.	6	538	−21.7	61	ese.	11
5	1,001	−6.0	97	calm.	0	954	−1.4	60	e.	4	895	0.0	80	sse.	4	794	−3.7	70	ssw.	5	698	−9.2	72	w.	9	612	−11.4	96	wsw.	12	538	−16.9	96		
6	998	−2.9	76	calm.	0	950	−2.6	74	e.	3	891	−0.7	77	e.	3	785	−4.6	92	wnw.	2	691	−10.2	94	se.	2	607	−16.4	100	sw.	6	532	−23.0	56	s.	5
7	989	−8.2	97	w.	1	943	−3.7	74	e.	4	885	−1.9	81	ese.	6	778	−6.3	67	s.	8	684	−10.3	47	sw.	7	600	−17.8	33	wsw.	10	524	−25.1	36		
8				e.	1				ne.	4																									
9	987	−10.0	96			941	−8.0	96			882	−10.4	100			775	−10.6	97			690	−15.1	98			595	−22.4	96			517	−29.8	94		
10	983	−13.0	70	ne.	2	937	−10.5	75	ene.	4	877	−9.2	88	e.	3	771	−9.9	99	wsw.	7	678	−15.1	81	wsw.	11	593	−22.7	95	wsw.	15	516	−30.0	54	wsw.	14
11	974	−10.4	77	calm.	0	928	−12.9	80	ne.	3	870	−14.4	87	ne.	4	762	−11.5	85	se.	4	671	−15.7	80	s.	5	586	−23.0	98			510	−30.8	63		
12	986	−16.0	85	calm.	0	939	−15.8	84	ne.	2	878	−19.4	88	ne.	2	767	−20.1	99	nne.	2	671	−20.4	64			584	−24.6	49			511	−32.1	44		
14	995	−22.0	86	ne.	1	946	−18.3	79	ne.	8	885	−18.8	80	ene.	9	777	−12.8	95	ese.	12	682	−17.4	59	s.	6	597	−20.8	41			521	−24.2	45		
15	983	−18.5	94			935	−17.7	98			874	−18.9	99			768	−11.5	97			674	−15.3	100			590	−18.9	94			516	−25.3	88		
16	997	−28.8	50	nw.	2	947	−20.1	56	calm.	0	885	−20.0	64	w.	3	777	−14.6	59	sw.	16	681	−17.2	62	sw.	18	596	−20.9	47	sw.	25	520	−27.7	40		
17				sw.	2				nnw.	2				nne.	1				sse.	2															
18	979	−23.0	56	ne.	1	930	−20.7	59	nne.	3	869	−22.3	61	ene.	5	763	−9.2	82	e.	6	670	−14.6	83			585	−21.4	91			511	−27.4	50		
19	996	−24.3	80	e.	1	947	−21.8	82	ese.	5	885	−22.2	83	ese.	3	777	−16.8	86	ssw.	9	681	−19.0	64			596	−22.5	41			521	−27.2	48		
20	988	−21.2	89	calm.	0	942	−3.9	80	e.	6	888	−0.9	64	s.	7	783	−6.5	58	sw.	14	688	−12.5	61	sw.	12	603	−20.1	64	sw.	14	525	−28.9	71	sw.	19
21	978	−12.0	91	calm.	0	932	2.4	62	e.	6	876	−0.5	68	se.	7	774	−6.0	63	s.	9	680	−12.9	65			595	−19.7	65			520	−27.1	45		
22	989	4.0	70	e.	5	927	5.6	62	se.	13	871	4.3	48	s.	10	770	−3.5	57	s.	14	681	−11.2	83	sw.	20	597	−17.4	76	sw.	20	522	−26.1	63		
23	1,005	−6.8	100	e.	1	958	−1.0	65	se.	6	900	−3.0	65	se.	4	792	−9.3	66	ssw.	5	696	−15.6	36	ssw	12	608	−20.1	29	wsw	23	531	−22.7	30	w.	35
24	995	2.3	86	nw.	1	950	6.0	63	se.	6	894	2.0	74	ssw.	3	789	−5.2	100	ssw.	5	695	−10.0	100												
25	977	7.0	84	e.	3	935	13.1	43	sse.	14	881	9.7	45	s.	13	780	5.1	46	s.	27	690	−1.7	44	ssw.	27	607	−9.6	57			534	−14.6	62		
26	1,008	−4.7	79	w.	7	960	−2.8	76	w.	11	901	−4.2	69	w.	16	794	−10.2	68	wsw.	17	695	−16.6	70	w.	22	608	−22.1	48			530	−27.4	44		
27	1,004	−14.0	100	calm.	0	959	−2.7	55	ene.	5	900	−3.0	36	ene.	7	794	−8.2	38	e.	9	684	13.8	46	ssw.	2	611	−15.8	28	wsw.	9	535	−22.6	24	w.	12
28	998	−15.8	91	nnw.	3	954	−4.2	60	ene.	6	895	−5.0	64	e.	5	789	−7.0	61	ese.	2	693	−8.9	45	wsw.	10	608	−14.7	36	w.	16	533	−21.5	37		
29	996	−13.5	96	nnw.	2	950	−4.7	75	ene	8	892	−3.3	76	ese.	6	787	−7.1	79	sw.	9	692	−12.4	69	sw.	5	605	−18.2	40	sw.	8	530	−24.7	32	wsw.	7
30	995	−13.9	94			947	−10.6	99			890	−9.8	100			783	−9.0	100																	
Means	992	−10.3	83			946	−5.9	72			887	−5.1	75			781	−6.3	79			687	−11.1	72			601	−16.9	67			526	−22.9	60		

ADDENDA, AFTERNOON OBSERVATIONS

Date	6,000 meters		7,000 meters		8,000 meters	
	D	V	D	V	D	V
6	ssw.	6	sw.	8	sw.	11
27	wsw.	14	wsw.	15		
29	sw.	6				

TABLE 3.—*Free-air data for standard levels above sea level obtained by means of airplane and pilot-balloon observations, winter 1936–37*—Continued

DECEMBER 1936

MORNING OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	1,008	−20.8	97	n.	1	960	−13.4	88	e.	5	900	−11.1	69	e.	5	791	−11.5	39	nne.	5	695	−15.0	38	nnw.	6	607	−18.5	33	nnw.	9	532	−22.6	26		
2	1,014	−32.0	38	n.	2	967	−13.4	40	ene.	5	908	−11.0	40	e.	6	796	−12.6	30	ne.	6	696	−14.8	27	n.	10	609	−20.4	28			532	−26.6	28		
3	1,013	−30.8	35	ene.	2	964	−12.4	35	e.	8	904	−12.3	35	e.	7	797	−10.9	30	ne.	5	699	−15.6	30	n.	7	611	−20.2	30	nnw.	9	533	−26.6	31	nnw.	9
4	1,001	−32.5	34	e.	3	953	−12.1	31	e.	13	892	−15.0	30	ese.	12	786	−9.0	23	ese.	9	691	−12.9	20	ne.	2	605	−18.3	20	ne.	2	528	−26.6	18	wnw.	4
5	991	−26.8	04	n.	3	943	−16.4	61	ese.	5	885	−16.0	62	e.	9	775	−10.6	90	wsw.	5	681	−13.9	84	w.	3	597	−20.8	95	w.	3	521	−28.2	100	sw.	3
6	991	−30.5	44	nne.	1	944	−16.0	46	nw.	1	885	−16.5	48	ene.	2	779	−12.8	55	Calm	0	683	−15.8	44	n.	3	597	−21.8	38	nw.	1	521	−29.6	39	ne.	2
7	991	−20.2	64	calm	0	942	−16.0	65	ese.	4	882	−14.4	75	sse.	5	775	−15.5	95	ssw.	2	679	−16.5	45			594	−22.6	39			519	−30.8	48		
8	988	−17.4	67	ne.	2	940	−11.8	63	ese.	6	880	−7.0	60	sse.	6	774	−12.3	77	wsw.	7	680	−16.4	97			594	−18.9	75			520	−25.4	52		
9	968	−13.5	95	n.	2	922	−4.1	71	e.	11	868	−4.5	68	ese.	17	763	−5.9	89	ese.	9	671	−10.6	85	s.	11	590	−13.2	94							
10				ssw.	2				sw.	3				wsw.	14				sw.	20				sw.	10										
11				e.	2				wsw.	3				wsw.	4				w.	5															
12	993	−26.0	88	wnw.	3	944	−18.5	89	wsw.	7	884	−21.1	92	wsw.	8	772	−18.8	90	w.	4	675	−23.8	79			587	−27.9	60			512	−35.4	47		
13				calm	0				e.	4				e.	7				ese.	9				se.	9				s.	13					
14	982	−35.5	30	calm	0	935	−21.7	34	se	4	875	−18.4	38	ssw	5	769	−18.9	40	sw.	11	672	−23.0	34	sw	12	585	−28.6	34	sw.	9	510	−34.6	34		
15																																				
16	977	−35.0	54	wsw.	1	932	−27.3	56	sw.	3	874	−25.3	61	wsw.	3	764	−15.2	63	ssw.	2	671	−22.4	70			583	−31.4	76			507	−35.6	61		
17																																				
18	993	−27.5	59			944	−25.8	62			882	−24.3	66			771	−27.2	70			672	−24.8	75			584	−32.5	78			507	−36.4	80		
19				wnw.	1				ese.	5				sse.	2																				
20	1,004	−39.4	41	calm	0	954	−17.5	44	ese.	6	894	−14.0	40	ese.	7	785	−19.4	51	n.	4	687	−23.3	50	nnw.	10	598	−29.4	40			519	−35.8	37		
21	997	−40.0	70	e.	2	948	−15.7	64	e.	8	888	−14.6	50	ese.	10	779	−16.6	35	ese.	15	682	−20.6	29			594	−27.0	26			517	−34.8	23		
22	993	−42.2	54	nnw.	2	942	−15.3	50	e.	9	881	−15.1	36	e.	11	774	−14.8	34	e.	23	678	−19.6	31	e.	23	592	−16.1	28			515	−34.8	26		
23				calm	0				e.	2				e.	8				ese.	10				e.	5										
24	985	−32.2	66	nnw.	2	937	−13.4	60	ese.	7	878	−10.1	60	se.	9	771	−11.0	57			677	−15.7	42			592	−23.3	38			516	−26.7	29		
25	989	−27.8	62	nnw.	2	944	−13.4	63	ese.	3	885	−9.5	64	nnw.	1	779	−12.0	72	nw.	7	684	−18.6	82	wnw.	7	597	−26.0	84			518	−34.3	82		
26	1,011	−21.9	86	nne.	2	963	−16.7	85	ese.	3	900	−14.8	94	w.	3	791	−12.2	85	nnw.	3	694	−19.5	86	nw.	7	605	−24.4	71			527	−30.6	46		
27	994	−12.9	100	n.	2	947	−9.2	83	ese.	8	888	−4.8	81	sse.	8	782	−4.2	100	w.	8	689	−6.8	100			605	−10.6	100			531	−17.1	100		
28	990	−9.4	98			943	−6.9	100			885	−7.5	100			777	−14.3	98			681	−18.9	69			596	−25.6	42			517	−32.7	68		
29	1,008	−5.7	97	se.	2	960	−4.9	80	wsw.	6	901	−6.8	74	w.	12	792	−11.0	88			696	−13.1	83			611	−15.6	84			535	−21.8	92		
30				w.	1				s.	2				sw.	9				wsw.	9															
31	1,004	−2.2	78	se.	4	958	0.3	71	wsw.	10	900	−3.0	84	wsw.	20	791	−8.5	98	wsw.	23	696	−12.9	54			609	−16.6	37			534	−23.3	60		
Means	995	−25.3	66			947	−14.0	63			887	−12.9	62			779	−13.3	66			684	−17.2	60			598	−22.6	55			521	−29.1	54		

AFTERNOON OBSERVATIONS

1	1,007	−24.0	46	n.	1	959	−14.0	56	e.	5	900	−12.0	60	e.	5	790	−11.9	44	nne.	5	693	−15.2	42	nnw.	6	606	−18.3	35	nnw.	9	530	−24.5	32		
2	1,015	−30.5	41	s.	1	963	−12.9	41	e.	6	901	−12.7	41	e.	6	791	−12.0	31	n.	4	696	−14.7	30	nnw.	9	608	−20.6	30	nnw.	12	531	−27.0	30		
3	1,012	−27.8	49	nnw.	2	962	−12.1	44	e.	7	904	−13.0	42	e.	9	794	−12.3	35	ne.	8	697	−15.2	31	n.	7	610	−21.6	32	nnw.	9	533	−27.0	32	nnw.	13
4	998	−31.0	32	nne.	4	950	−13.0	30	e.	12	890	−15.3	29	ese.	15	780	−8.0	21			686	−13.4	20			601	−19.0	18			525	−26.3	18		
5	990	−27.3	54	ene.	2	941	−16.4	51	e.	2	880	−16.3	56	ese.	7	774	−10.4	79	wnw.	2	680	−13.6	54	n.	3	596	−20.4	75	wnw.	4	522	−27.5	80	wnw.	4
6	991	−29.0	60	calm	0	943	−16.1	58	wsw.	1	882	−16.4	60	e.	1	775	−14.1	72	wnw.	2	680	−16.5	45	ene.	3	596	−22.3	36	ne.	1	518	−30.5	40	ene.	2
7	991	−17.5	48	calm	0	946	−14.2	48	ese.	4	885	−12.1	59	sse.	5	780	−14.0	82	ssw.	2	682	−18.4	78			597	−22.8	78			521	−29.9	73		
8	986	−13.5	91	w.	2	940	−9.4	75	ese.	7	882	−6.4	65	se.	14	775	−10.3	84			680	−14.6	98			595	−19.6	100							
9	958	−11.2	100	calm	0	913	−3.2	93	e.	13	857	−4.8	92	ese.	16	758	−2.8	76	se.	11	667	−4.8	63	s.	10	586	−12.3	76			514	−20.0	94		
10	978	−12.0	98	ssw.	2	933	−10.4	100	sw.	3	873	−12.2	100	wsw.	14	776	−10.2	100	sw.	20	671	−15.3	100	sw.	10						515	−32.3	55		
11	990	−14.3	79	e.	2	943	−12.4	86	wsw.	3	884	−14.5	95	wsw.	4	775	−17.5	100	w.	5	679	−20.3	100			592	−25.4	72			515	−32.3	51	sw.	16
12	992	−28.0	51	w.	1	944	−20.6	57	wsw.	6	882	−22.0	61	w.	14	771	−19.9	76	wnw.	4	674	−24.0	68	w.	3	588	−28.1	57	sw.	8	512	−35.3	51	sw.	16
13	984	−27.4	41	calm	0	935	−21.0	44	e.	4	874	−21.2	47	e.	7	767	−20.5	56	ese.	9	670	−19.6	66	se.	9	585	−23.6	79	s.	13	510	−31.6	84		
14	982	−37.2	29	w.	1	932	−21.8	33	e.	1	872	−17.9	38	se.	7	766	−17.8	36			670	−22.9	35			583	−28.6	34			506	−34.6	32		
15																																				
16	978	−36.5	29	ese.	2	928	−27.5	30	sw.	1	868	−25.1	34	w.	2	758	−17.1	44	ssw.	2	664	−21.4	53			576	−30.4	47			503	−34.4	40		
17	984	−29.4	28			934	−29.1	30			872	−27.9	30			762	−17.1	35			666	−22.2	36			582	−27.8	40			506	−32.0	48		
18	997	−28.5	84			945	−26.5	85			880	−24.8	86			770	−28.3	88			671	−26.6	89			584	−33.1	90			506	−38.9	90		
19	1,004	−40.6	51	nnw.	1	952	−23.3	53	ese.	5	892	−21.5	55	sw.	2	784	−21.0	50	nw.	6	685	−27.6	58	wnw.	8	594	−34.3	60	nw.	12	513	−40.4	61	nw.	13
20	1,004	−38.9	49	calm	0	955	−19.1	51	ese.	6	894	−14.4	49	ese.	7	786	−18.7	53	n.	4	786	−22.7	40	nnw.	10	596	−29.6	37			518	−36.5	34		
21	996	−38.9	64	nnw.	2	946	−15.5	58	ene.	9	886	−16.0	54	e.	10	778	−17.4	38	ene.	16	679	−22.6	34			592	−29.0	29			514	−35.9	28		
22	991	−41.1	45	n.	2	941	−15.8	43	e.	8	883	−16.4	40	e.	12	776	−16.1	31	e.	19	680	−20.8	28			593	−27.3	25			516	−34.9	26		
23	997	−36.1	56	calm	0	945	−17.2	57	sw.	2	888	−15.4	59	e.	6	779	−14.2	66	e.	9	681	−15.4	54	s.	1	595	−23.4	59	w.	2	519	−32.2	68		
24	986	−30.6	83	nnw.	3	940	−13.0	71	e.	6	881	−9.0	62	se.	7	772	−12.0	68			680	−18.1	80			593	−21.8	74			518	−28.2	82		
25	990	−28.6	89	n.	1	943	−12.4	77	ese.	2	883	−9.0	71	e.	1	778	−11.8	77			680	−19.0	91			594	−26.1	93			517	−34.0	90		
26	1,012	−23.6	80	nne.	2	962	−15.7	84	ese.	3	902	−15.5	95	w.	3	792	−12.7	78	nnw.	3	695	−18.1	75	nw.	7	607	−24.3	54			528	−29.4	43		
27	992	−10.0	98	n.	2	945	−10.4	100	ese.	8	885	−4.2	100	sse.	8	781	−5.1	100	w	8	687	−8.7	96			597	−27.7	64			519	−33.8	46		
28	996	−5.8	85			950	−4.8	87			891	−8.4	90			782	−15.5	84			685	−24.4	90			604	−13.0	94			534	−19.4	85		
29	1,005	−5.0	89	se.	2	958	−4.5	75	wsw.	6	899	−5.0	56	w.	12	790	−6.8	43			695	−10.6	48			609	−14.4	43			528	−27.8	53		
30	1,002	−4.7	100	w.	1	958	−0.8	98	s.	2	900	−4.0	97	sw.	9	791	−11.7	84	wsw.	9	695	−16.6	54			605	−22.0	64			535	−21.7	94		
31	1,003	−3.6	85	e.	3	958	0.0	75	wsw.	9	900	−3.0	84	wsw.	8	795	−5.5	56			700	−11.4	85			612	−16.6	95							
Means	994	−24.4	64			946	−14.4	63			886	−13.8	63			778	−13.6	63			682	−17.7	62			595	−23.1	60			519	−29.6	60		

ADDENDA—AFTERNOON OBSERVATIONS

Date	6,000 meters		7,000 meters		8,000 meters		10,000 meters	
	D	V	D	V	D	V	D	V
3	nw.	16						
5	wsw.	6	w.	5	w.	1		
6	calm	0	nne.	1	ese.	2	W.	10
12	sw.	35						

TABLE 3.—*Free-air data for standard levels above sea level obtained by means of airplane and pilot-balloon observations, winter 1936–37*—Continued

JANUARY 1937

MORNING OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	987	1.1	60	s.	6	943	4.7	42	ssw.	10	886	2.0	43	sw.	13	782	−3.6	43	wsw.	18	689	−10.0	49	wsw.	28	604	−16.7	60			528	−23.7	71		
3				ese.	4				w.	5				w.	13				nw.	15															
4	1,027	−22.8	74	nnw.	2	979	−9.0	72	ese.	8	919	−2.0	47	sse.	4	813	−1.9	20	nw.	7	715	−8.7	16			628	−15.8	17			551	−23.0	17		
5	1,006	−15.0	88	nw.	1	957	−1.8	43	ese.	5	900	−0.4	30	sw.	8	795	−4.1	26	ssw.	11	700	−9.0	35	sw.	16	614	−11.0	61	ssw.	10	541	−15.6	82		
6				wsw.	13				w	16				w.	16																				
7	990	−1.0	92	se.	2	946	1.7	61	sse.	3	890	−1.5	68	s.	2	785	−7.5	85			690	−13.4	92			604	−18.5	86			527	−23.6	85		
8	1,008	−17.3	83	wsw.	3	961	−7.6	84	w.	6	903	−6.0	64	wnw.	9	794	−12.8	68	nw.	13	696	−17.9	38	nw.	12	607	−25.1	32	nw.	9	528	−34.7	34		
12	1,013	−14.4	90	w.	2	965	−14.4	90	w.	4	905	−13.8	90	nw.	4	796	−16.4	97			697	−23.4	97			607	−24.2	57			531	−27.4	37		
14	1,000	−10.8	100			952	−5.0	100			889	−5.0	100			787	−10.8	95			691	−17.1	92												
17	1,011	−13.8	82	w.	7	962	−10.1	82	w.	17	903	−11.8	62	wnw.	14	792	−15.8	40	w.	19	694	−23.1	35			603	−27.6	34			525	−33.7	34		
18	1,006	−15.9	76	e.	2	958	−8.6	50	ese.	9	900	−7.3	42	se.	11	794	−10.4	50	ssw.	5	698	−12.3	87	sw.	7	611	−17.0	95			535	−22.9	93		
19	1,004	−13.3	92	ssw.	2	955	−7.8	82	wnw.	1	896	−5.6	70	wnw.	13	789	−8.4	93	w.	20	693	−12.4	58	w.	18	607	−15.5	43			532	−19.3	80		
21	995	0.3	100	sse.	4	949	0.9	81	sw.	6	891	−2.2	82	sw.	8	786	−8.9	98	sw.	22	690	−13.3	98			605	−15.7	41			529	−21.4	73		
22	1,013	−16.2	68	w.	7	965	−17.2	60	w.	14	901	−20.4	68	nw.	7	787	−21.2	50	nw.	23	686	−25.0	28	nw.	27	597	−32.0	24			517	−38.7	22		
23	1,000	−11.6	57	e.	5	955	−11.0	46	ese.	16	894	−13.9	39	se.	22	788	−11.7	57	sse.	16	692	−17.0	100			605	−20.7	93			528	−24.8	94		
24	993	−6.0	89			948	−8.4	90			890	−11.7	92			788	−19.2	92			682	−22.6	92			594	−26.0	89			518	−33.9	80		
25	1,022	−20.1	50	sw.	8	971	−21.0	50	w.	7	909	−18.8	52	wnw.	12	797	−21.8	51	wnw.	12	694	−26.3	29			605	−29.8	24			524	−33.0	21		
26	1,024	−24.2	86	calm.	0	975	−16.8	60	ese.	6	913	−10.9	40	sse.	4	803	−14.5	60	w.	7	704	−13.2	62	nw.	11	615	−17.6	95			537	−23.2	88		
27	1,011	−19.8	98	nnw.	2	964	−10.0	74	ese.	1	905	−1.6	64	ssw.	6	799	−4.2	62	sw.	7	702	−11.0	44	wsw.	12	615	−14.3	40	wsw.	12	537	−20.0	39		
28	1,018	−17.5	100	nne.	1	970	−7.7	81	e.	6	905	−3.7	38	se.	7	800	−4.5	22	w.	4	705	−8.6	35	w.	10	617	−15.2	35			540	−23.1	34		
29				wnw.	7				wnw.	11				nw.	10																				
30	1,032	−18.7	96	nw.	2	981	−11.8	99	e.	4	918	−9.3	60			805	−14.5	62			704	−18.9	45			614	−26.0	30			534	−25.8	23		
31	1,027	−32.2	82	calm.	0	979	−11.7	68	e.	7	915	−12.0	60	e.	9	805	−13.6	44	ne.	8	707	−17.6	30	ne.	13	616	−19.7	26			538	−24.7	29		
Mean	1,008	−14.5	83			960	−8.6	71			900	−7.8	61			793	−11.3	61			695	−16.0	58			608	−20.5	54			531	−26.0	57		

AFTERNOON OBSERVATIONS

1	990	−1.8	71	sse.	6	945	2.9	55	wsw.	15	888	−0.7	74	wsw.	20	782	−7.9	91	wsw.	25	687	−11.9	75	wsw.	32	604	−18.2	90			527	−24.5	90		
3	1,028	−20.0	74	ese.	4	978	−18.5	79	w.	5	915	−12.0	88	w.	13				nw.	15															
4	1,023	−23.0	87	ne.	3	975	−5.9	55	ese.	7	914	1.2	35	se.	7	808	−0.9	20	ssw.	5	712	−7.6	20	w.	7	625	−15.2	18	w.	12	547	−21.8	26		
5	998	−14.0	96	sse.	2	951	−0.5	48	so.	11	893	−0.1	40	se.	8	789	−3.7	30	s.	15	694	−8.4	46	ssw.	23	610	−10.8	83			536	−15.4	88		
6	1,012	−4.8	86	w.	4	965	−1.9	81	w.	11	908	−4.6	85	w.	19	798	−10.9	85	w.	22	701	−15.3	48			612	−23.1	36			534	−30.8	36		
7	988	−0.4	100	se.	2	942	0.8	76	sse.	3	885	−2.3	81	s.	2	781	−7.7	91			687	−13.2	92													
8	1,014	−12.9	99	w.	2	966	−8.9	99	n.	1	909	−8.1	90	wnw.	4	799	−11.8	62			700	−17.5	36			610	−25.5	34			532	−31.4	30		
9	1,010	2.0	89			963	1.7	92			905	−0.1	99																						
12	1,015	−14.9	99	w.	2	967	−15.0	100	nne.	2	909	−14.7	100	ne.	4	800	−16.2	87	nw.	4	699	−21.4	60			610	−22.8	42			531	−25.2	35		
14	996	−7.0	100			948	−6.0	90			888	−6.4	65			781	−11.9	86			685	−12.6	92			602	−16.4	94			526	−20.5	90		
15	982	−4.5	98			938	1.8	65			881	−1.5	86			775	−7.4	80			682	−14.1	76			597	−19.0	32			523	−26.8	44		
16	1,000	−5.3	74			954	−5.0	74			896	−9.2	84			789	−13.6	74			692	−15.7	41			604	−23.8	38			527	−32.8	42		
17	1,016	−12.5	57	ese.	1	968	−10.9	58	wnw.	6	908	−12.5	58	wnw.	14	799	−15.1	38	wnw.	16	699	−22.5	36	wnw.	23	607	−24.9	35	wnw.	24	529	−31.1	37		
18				e.	2				ese.	9				se.	11				ssw.	5															
19				nnw.	1				e.	3				wsw.	4				wsw.	10															
20	985	1.2	100			940	2.0	98			883	0.5	100			780	−3.9	100																	
21	992	−1.4	89	sse.	4	947	−1.5	75	sw	6	889	−5.3	80	sw.	8	782	−10.8	78	sw.	22	687	−14.6	60			601	−19.9	84			524	−25.4	81		
22	1,018	−16.6	63	w.	7	971	−17.7	61	w.	14	909	−19.1	60	nw.	7	799	−19.0	40	nw.	23	698	−25.0	40	nw.	27	606	−32.0	39			524	−35.8	30		
23	994	−9.4	89	e.	5	947	−12.0	78	ese.	16	888	−9.6	100	se.	22	781	−10.4	100	sse.	16	685	−16.7	100			597	−24.7	97			520	−31.0	93		
25	1,025	−24.0	94	ene.	2	975	−22.1	94	nw.	2	911	−19.4	81	wnw.	6	798	−21.3	42	nw.	14	697	−26.4	32	nnw.	23	605	−29.2	28	nnw.	32	525	−33.4	40		
26	1,023	−18.8	90	calm.	0	972	−16.3	77	ese.	6	911	−9.9	98	sse.	4	800	−8.9	98	w.	7	704	−11.6	98	nw.	11	616	−16.5	98			540	−22.5	90		
27	1,017	−12.4	94	nnw.	2	969	−11.1	98	ese.	1	908	−8.0	98	ssw.	6	800	−9.1	92	sw.	7	702	−15.2	85	wsw.	12	614	−18.5	32	wsw.	12	537	−20.2	23		
28	1,014	−12.0	100	wsw.	2	966	−8.4	69	ese.	9	907	−3.1	33	sse.	14	800	−5.9	20	s.	9	704	−9.8	28			616	−16 9	70			539	−23.3	64		
29	1,022	−5.5	85	wnw.	7	974	−6 9	81	wnw.	11	914	−11.0	96	nw.	10	803	−16.6	78			704	−20.9	60			613	−27.7	60			532	−36.4	56		
30	1,032	−14.0	94	nw.	2	982	−10.4	75	e.	4	921	−9.2	67			810	−15.1	66			710	−19.4	44			620	−24.0	28			540	−23.0	24		
31	1,025	−23.3	89	calm.	0	976	−10.5	60	e.	4	914	−11.7	54	e.	9	804	−10.9	30	ene.	9	705	−13.4	21	ene.	12	619	−16.1	20	ne.	24	540	−22.4	25		
Mean	1,007	−10.6	88			959	−7.5	77			900	−7.4	77			792	−10.8	70			696	−15.5	61			608	−20.8	59			531	−26.2	58		

TABLE 3.—*Free-air data for standard levels above sea level obtained by means of airplane and pilot-balloon observations, winter 1936–37*—Continued

FEBRUARY 1937

MORNING OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	1,021	−31.1	68	w.	1	975	−10.8	61	ene.	8	913	−7.1	48	e.	15	804	−12.0	46	e.	12	707	−13.7	65			619	−17.0	55			542	−23.8	61		
2	1,017	−28.3	80	sw.	1	970	−7.1	43	e.	6	910	−6.4	31	ese.	8	802	−7.6	24	ene.	10	705	−12.9	33	ne.	13	617	−20.4	48			538	−27.3	68		
3	1,011	−27.4	83	nnw.	2	961	−11.1	50	se.	3	900	−3.6	31	sse.	2	794	−7.0	29	nw.	4	699	−11.7	31	nnw.	10	612	−15.8	47			536	−23.0	71		
4	1,010	−29.2	87	calm	0	960	−17.0	79	s.	3	898	−14.4	63	w.	10	788	−7.7	56	wsw.	15	693	−12.8	41	w.	15	608	−17.0	28			532	−23.0	35		
7	984	−7.2	100			942	−7.0	100			833	−9.3	100			778	−14.4	89			680	−22.7	91			593	−27.6	87			515	−35.1	84		
8	985	−17.8	100	se.	2	938	−11.6	94	w.	4	878	−13.2	93	w.	8	770	−19.4	94	w.	10	674	−26.5	93	w.	8	585	−33.1	87			506	−38.7	70		
9	990	−19.7	86			941	−19.9	90			880	−22.0	92			770	−26.3	87			670	−27.2	84			582	−33.9	81			503	−40.9	80		
10	981	−37.8	55	ene.	1	933	−19.7	68	nne.	4	871	−20.7	73	e.	5	753	−22.0	64			665	−28.9	63			574	−35.5	50			498	−41.5	40		
11	982	−22.2	86	wsw.	1	935	−25.5	88	nw.	2	873	−28.8	90	wsw.	4	760	−27.0	84	se.	3	664	−26.5	91	ese.	7	576	−32.8	63	se.	10	499	−41.2	56	ese.	12
12	983	−34.2	68			933	−25.3	73			875	−26.2	77			765	−26.2	81			665	−28.5	81			579	−34.9	82			500	−44.2	82		
13	975	−41.9	70	n.	1	928	−23.2	69	e.	7	868	−23.8	64	ese.	6	759	−23.6	44	se.	2	661	−31.7	47			571	−39.0	50			495	−45.6	52		
14	959	−26.7	73	nnw.	1	905	−19.4	61	ene.	4	853	−17.8	51	e.	8	748	−18.0	30	ene.	12	653	−25.0	27	e.	12	568	−32.7	27	e.	10	493	−38.0	40		
15	968	−25.6	79	sse.	1	921	−25.6	80	ene.	3	862	−19.8	82	ese.	4	756	−17.2	68	ssw.	12	661	−24.4	55	ssw.	12	575	−33.0	68			496	−42.4	59		
16	975	−27.5	89			928	−29.0	91			868	−27.1	93			757	−22.7	100			660	−29.0	97			572	−37.3	92			493	−46.3	88		
17	994	−32.5	76	sse.	1	945	−32.7	77	calm	0	882	−33.6	82	w.	7	764	−27.0	66	w.	3	662	−31.2	76	s.	5	574	−38.3	78			494	−47.6	81		
18				wsw.	2				e.	5				se.	2																				
19	987	−36.1	84	e.	5	940	−17.8	45	ese.	7	880	−16.8	40	ese.	13	772	−11.0	24	s.	6	676	−18.4	20	ssw.	6	592	−23.1	20			516	−28.6	22		
20	983	−31.7	89	nnw.	1	936	−13.7	61	ese.	3	878	−9.0	54	ese.	8	770	−10.4	55			676	−15.8	61			593	−22.2	54			516	−30.8	52		
21	991	−29.7	89	calm	0	945	−11.5	59	se.	3	886	−6.8	58	sw.	5	779	−11.0	67	w.	8	683	−18.1	72	wsw.	8	597	−26.5	74			519	−34.1	66		
22	1,008	−25.8	88	nw.	1	960	−15.5	80	calm	0	898	−10.7	100	wnw.	5	791	−13.8	84	wnw.	7	692	−20.2	80	nnw.	6	602	−29.0	88	nw.	4	523	−36.8	84		
23	1,011	−17.6	100	calm	0	965	−14.9	100	ne.	2	903	−13.5	98	ne.	4	794	−17.9	100	nne.	4	695	−21.9	53			605	−28.0	73			526	−36.1	77		
24	996	−21.1	86	calm	0	949	−14.0	88	ne.	5	849	−14.4	87	e.	7	780	−16.9	93	ese.	13	681	−21.3	95	e.	10	594	−21.1	66			518	−26.3	63		
25	994	−15.0	90	ene.	1	946	−17.8	97	n.	1	887	−16.0	92	nnw.	2	780	−14.0	90	ese.	2	682	−16.2	53			596	−24.4	71			519	−31.2	82		
26	998	−18.1	91	ese.	1	951	−17.0	98	e.	2	891	−15.7	95	ssw.	1	782	−15.1	84	wsw.	13	685	−20.7	90	wsw.	10	597	−26.5	86			520	−34.3	82		
27	998	−18.4	100			951	−17.4	100			889	−15.8	100			778	−16.3	100			683	−19.2	100			595	−26.7	96			517	−34.8	82		
28	1,011	−24.3	100	nw.	1	966	−17.0	100	sse.	2	904	−18.4	100	wsw.	6	794	−18.8	100	wnw.	7	693	−23.8	100			603	−28.0	92			525	−34.5	72		
Mean	992	−25.9	84			945	−17.7	78			885	−16.4	76			776	−15.7	70			679	−16.9	68			591	−28.2	67			514	−35.4	66		

AFTERNOON OBSERVATIONS

1	1,020	−23.5	90	w.	1	972	−9.4	57	ene.	8	912	−8.4	40	e.	15	802	−12.0	44	e.	12	704	−13.6	43			617	−17.8	42			540	−23.8	31		
2	1,015	−21.0	89	nnw	2	967	−7.2	59	e.	4	907	−5.4	40	e.	6	800	−7.5	32	e.	5	703	−14.2	50	nne.	9	615	−20.7	73	n.	11	536	−24.4	55	ne.	6
3	1,010	−21.8	80	ene.	1	962	−11.8	68	e.	2	902	−2.9	40	ssw.	4	795	−6.8	32	wnw.	4	701	−12.0	36			614	−16.0	42			537	−21.5	67		
4	1,011	−21.9	85	wnw.	1	961	−18.6	91	s.	2	909	−13.1	95	w.	12	793	−13.3	88	wnw.	17	695	−15.7	94	wnw.	13	607	−21.2	65			529	−26.7	34		
5	1,009	−12.8	100			962	−14.5	99			902	−14.2	100			794	−14.0	68			698	−17.0	91			610	−22.4	83			530	−28.5	97		
6	1,000	−11.7	100			952	−12.4	100			894	−11.8	100			789	−14.5	60			692	−15.2	100			605	−18.4	100			530	−23.0	42		
7	984	−3.9	93			938	−6.6	97			881	−10.0	100			775	−17.2	100			678	−22.5	95			592	−30.1	89			513	−36.7	84		
8	988	−12.5	85	se.	2	940	−14.8	88	w.	4	882	−16.6	88	w.	8	775	−21.0	90	w.	10	678	−27.4	86	w.	8	587	−35.3	82			508	−39.9	81		
9	988	−17.8	84			941	−19.0	85			879	−21.6	93			768	−24.1	94			670	−28.6	91			5 0	−34.4	79			502	−40.8	74		
10	979	−29.6	87	wnw.	1	931	−22.0	80	ene.	1	870	−21.0	78	e.	4	760	−22.4	69	se.	4	662	−26.7	70	s.	6	574	−32.1	76			499	−40.9	81		
11	982	−23.1	79	wsw.	1	933	−26.4	78	nw.	2	871	−28.8	85	wsw.	4	760	−27.5	84	se.	3	661	−27.9	93	ese.	7	574	−34.2	83	se.	10	495	−42.1	62	ese.	12
12	984	−26.6	76			935	−26.5	80			875	−26.5	81			764	−27.5	86			664	−31.1	81			574	−36.8	76			495	−46.0	79		
13	971	−26.1	83	n.	1	922	−20.1	64	e.	7	865	−19.5	49	ese.	6	757	−23.2	36	se.	2	658	−30.0	37			571	−36.4	35			492	−44.2	38		
14	957	−17.6	71	calm	0	912	−15.1	65	ne.	6	855	−16.6	72	ese.	11	751	−21.8	89	ene.	13	658	−24.0	75	e.	11	573	−28.6	74			496	−38.3	80		
15	973	−27.5	86	sse.	1	925	−26.8	88	ene.	3	865	−24.4	90	ese.	4	754	−20.5	87	ssw.	12	658	−27.2	71	ssw.	12	570	−35.8	75			494	−44.2	61		
16	980	−25.3	82			932	−29.4	85			872	−29.5	86			761	−24.4	91			665	−29.2	75			575	−38.3	63			496	−47.4	73		
17	997	−31.0	76	sse.	1	944	−31.7	80	calm	0	882	−32.6	84	w.	7	770	−29.4	86	w.	3	672	−32.0	72	s.	5	580	−37.0	70			501	−44.7	64		
18	1,009	−31.3	70	wsw.	2	952	−22.0	50	e.	5	891	−24.6	65	se.	2	776	−22.1	38			679	−23.4	30			592	−27.7	28			515	−34.6	31		
19	984	−17.8	64	n.	4	938	−15.1	50	ese.	8	878	−14.0	47	se.	13	771	−12.2	52	se.	8	676	−18.6	68	s.	9	590	−22.6	71			515	−28.9	77		
20	984	−19.3	79	calm	0	939	−11.8	57	e.	4	880	−9.6	57	ese.	8	771	−10.6	58	sw.	3	676	−17.1	67	sse.	1	590	−23.9	62	ese.	1	513	−33.3	72	ne.	1
21	996	−19.2	86	w.	1	949	−13.4	70	sse.	2	890	−7.6	78	sw.	6	781	−13.9	97	w.	10	685	−20.8	90	wsw.	6	596	−28.5	83			518	−37.1	83		
22	1,012	−15.0	89	nw.	1	965	−14.8	98	calm	6	905	−11.5	100	wnw.	5	792	−13.7	71	wnw.	7	694	−19.4	50	nnw.	6	604	−27.0	80	nw.	4	526	−35.2	81		
23	1,006	−13.9	97	calm	0	959	−12.4	84	ne.	2	899	−15.1	90	ene.	5	789	−16.8	75	ene.	8	690	−21.4	72	e.	8	602	−27.8	61	ene.	10	524	−35.3	51	ene.	7
24	993	−16.4	85	ene.	1	947	−15.3	81	ne.	3	885	−15.4	79	e.	6	778	−21.0	100	ese.	12	682	−16.1	67			596	−23.7	87			519	−29.4	78		
25	996	−15.7	90	sse.	2	948	−17.7	96	se.	2	885	−17.8	100	se.	2	778	−14.3	80	sw.	10	680	−18.2	44	wsw.	8	595	−25.0	86	wnw.	6	518	−32.0	92		
26	996	−16.0	91	wnw.	2	950	−14.5	84	ene.	3	890	−13.5	88	sse.	2	783	−15.1	57	wsw.	6	685	−21.1	44	sw.	6	597	−27.0	54	wsw.	2	520	−33.6	57	sw.	5
27	1,004	−17.9	97			956	−17.0	100			895	−19.0	100			785	−16.8	100			686	−21.4	98			599	−26.9	98			522	−34.6	94		
28	1,012	−12.9	97	nw.	1	962	−16.3	99	sse.	2	901	−18.4	100	wsw.	6	790	−19.7	100	wnw.	7	691	−22.4	100			602	−28.4	88			523	−35.9	66		
Mean	994	−19.6	85			946	−17.2	79			886	−16.8	79			777	−18.0	74			680	−21.9	71			592	−28.0	72			514	−35.1	67		

ADDENDA, AFTERNOON OBSERVATIONS

Date	6,000 meters		7,000 meters		8,000 meters	
	D	V	D	V	D	V
20	sse.	6	sse.	10	sse.	12
23	ese.	5	ene.	4	e.	2
26	sw.	7	ssw.	12		

TABLE 3.—*Free-air data for standard levels above sea level obtained by means of airplane and pilot-balloon observations, winter 1936–37*—Continued

MARCH 1937

MORNING OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	1,010	−19.2	93	nw.	1	961	−16.5	99	ne.	2	900	−16.6	100	n.	1	788	−18.4	100	ssw.	1	688	−23.3	100			599	−26.6	86			521	−23.4	60		
2	1,002	−30.6	86	nnw.	1	955	−16.1	70	e.	6	892	−18.4	80	ese.	6	784	−16.8	40	e.	9	688	−20.3	44	e.	8	602	−26.1	34	ene.	3	523	−33.5	41		
3	995	−31.4	73	n.	2	948	−17.7	65	e.	4	886	−19.6	76	e.	2	774	−19.1	66	ene.	5	678	−23.6	50	ne.	2	591	−29.4	55	wnw.	5	514	−34.6	44		
4	993	−36.4	64	n.	1	945	−18.8	64	ne.	3	884	−20.5	76	se.	2	773	−18.3	74	e.	5	675	−22.9	60	ase.	3	588	−28.7	40			514	−32.6	35		
5	990	−22.0	72	Calm.	0	943	−21.4	72	ne.	3	881	−21.2	83	e.	2	770	−15.0	46	ese.	5	674	−20.0	30			587	−25.9	27			511	−32.5	25		
6	998	−20.7	76	se.	1	949	−22.4	84	ene.	2	888	−22.0	92	ne.	2	779	− 8.6	76	ese.	4	685	−16.8	88			598	−24.3	92			519	−29.5	79		
7	996	−24.3	89	sse.	3	949	−22.1	88	ese.	2	887	−17.1	96	e.	4	779	−7.1	64	sse.	9	684	−15.4	70			600	−21.4	55			522	−30.9	75		
8	997	−29.4	86	n.	2	950	−21.9	88	ese.	2	888	−6.7	82	ene.	1	781	−9.7	66			685	−17.6	80			598	−25.1	69			522	−33.4	56		
9	998	−21.6	89			951	−21.1	98			891	−15.8	100			783	−10.5	98			687	−17.5	100			601	−24.0	93			522	−27.7	44		
10	994	−26.7	78	Calm.	0	948	−11.4	79	ene.	4	890	−5.7	82	se.	10	785	−5.1	56	s.	8	689	−13.2	69	ssw.	8	602	−20.5	74			526	−27.7	61		
11	995	−15.6	99	ese.	2	948	0.2	74	ese.	5	890	−2.0	76	ese.	9	784	−5.3	70	sw.	10	689	−13.8	87	sw.	8	603	−21.2	94	ssw.	9	526	−26.5	99		
12	998	−18.1	100	nw.	1	952	3.2	55	ese.	5	896	1.0	53	se.	5	790	−5.6	58	sw.	1	695	−13.0	68	sse.	7	610	−19.4	61	s.	7	532	−26.0	39	s.	4
13	988	−18.0	100	nnw.	2	942	1.7	60	ese.	6	885	−2.0	67	se.	11	781	−4.6	59	se.	9	687	−11.3	64	s.	9	603	−18.5	65	sse.	9	527	−25.0	57	sse.	14
14	978	−16.5	100	n.	3	934	0.9	61	ese.	6	878	0.7	53	sse.	7	774	−6.6	54	ssw.	12	680	−14.8	69	ssw.	15	594	−21.1	72	wsw.	3	518	−27.8	60	sse.	6
15	976	−11.2	100	Calm.	0	932	0.9	60	ese.	5	875	−0.3	53	se.	6	770	−8.5	54	s.	7	678	−16.6	63	s.	6	591	−25.0	61	ssw.	8	514	−31.6	59	s.	15

AFTERNOON OBSERVATIONS

1	1,007	−13.9	82	Calm.	0	957	−14.6	86	ene.	4	896	−16.5	92	ene.	3	786	−19.0	100	ene.	4	688	−22.2	72	nne.	5	601	−27.0	78	nne.	1	522	−34.6	82	w.	3
2	997	−16.1	60	s.	2	950	−14.9	65	ene.	4	889	−17.1	68	ene.	2	781	−16.8	68	e.	10	683	−21.1	52	e.	6	595	−27.1	41	e.	2	518	−33.6	39	w.	1
3	993	−17.6	54	nnw.	2	945	−16.5	55	ene.	5	886	−19.5	58	se.	3	779	−20.4	70	e.	6	682	−24.1	60	se.	1	594	−30.1	60	wsw.	4	514	−36.1	53	wsw.	10
4	993	−20.6	57	nnw.	1	945	−18.7	58	ne.	2	886	−20.5	65	n.	1	774	−19.0	77	se.	3	678	−23.1	59	ssw.	3	591	−26.0	40			514	−31.7	37		
5	991	−18.5	73	ssw.	2	944	−19.9	78	nne.	2	884	−19.4	81	se.	1	774	−12.1	64			678	−17.1	38			593	−23.5	28			515	−30.3	27		
6	1,000	−19.4	77	sw.	2	950	−21.2	81	ene.	2	889	−23.7	86	e.	2	778	−11.0	71	e.	6	682	−18.3	90			595	−23.9	77			520	−30.4	76		
7	993	−18.3	67	ssw.	2	944	−19.2	70	ene.	2	885	−11.3	76	se.	12	779	−8.4	59	s.	10	683	−16.1	68	s.	14	598	−24.6	76			520	−33.9	81		
8	998	−16.8	72	ssw.	2	950	−19.4	82	e.	2	889	−10.0	96	sse.	1	783	−11.3	86	ssw.	8	687	−17.8	66	asw.	11	601	−25.2	64	ssw.	9	523	−31.1	43	ssw.	4
9	998	−16.0	89			951	−17.7	91			890	−14.8	97			781	−9.4	100			686	−14.2	100			600	−19.7	57			524	−25.4	66		
10	991	−7.2	67	se.	2	947	1.6	58	ene.	6	890	−1.4	64	se.	12	785	−4.4	48	ssw.	10	690	−12.6	51			604	−21.0	62			527	−28.6	65		
11	997	−7.2	67	wsw.	2	952	3.3	56	se.	2	897	1.2	58	se.	15	791	−3.2	45	ssw.	11	697	−12.5	50	ssw.	11	610	−21.0	54	ssw.	10	533	−29.6	63	s.	13
12	994	−2.0	70	Calm.	0	949	3.9	49	e.	5	891	0.0	60	ese.	6	787	−5.7	61	ssw.	4	692	−12.4	60	s.	7	605	−18.7	54	ssw.	11	530	−22.8	36		
13	981	3.0	65	n.	2	939	2.3	60	ese.	7	882	−1.6	64	ese.	12	779	−4.4	58	sse.	8	686	−11.8	60	se.	5	601	−19.7	69	sse.	8	524	−26.0	55	sse.	16
14	975	0.7	65	e.	1	932	3.0	55	ese.	5	876	0.0	54	ese.	5	773	−7.9	60	ese.	3	679	−16.4	78	se.	4	594	−23.9	90	s.	8	517	−29.0	88		
15	974	3.5	64	ne.	2	931	4.5	50	ese.	8	878	0.7	54	ese.	8	771	−6.6	62	ese.	4	679	−14.6	68	sse.	5	595	−22.9	78	ssc.	8	518	−29.1	80		

ADDENDA—MORNING OBSERVATIONS

Date	6,000 meters	
	D	V
12	nnw.	11
13	se.	17
14	s.	9

ADDENDA—AFTERNOON OBSERVATIONS

Date	6,000 meters		7,000 meters	
	D	V	D	V
1	w.	7	wnw.	15
2	calm	0		
3	wsw.	15		
8	w.	6	nw.	6

SEPTEMBER 1937

AIRPLANE OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
16	976	12.8	62	e.	4	935	11.6	68	ese.	11	880	9.9	62	se.	10	779	1.7	66	s.	13	686	−6.1	87	sw.	17	604	−12.8	87	sw.	17	527	−17.8	98		
18	985	9.0	66	Calm.	0	942	6.3	75	sse.	2	887	5.7	62	sse.	3	783	−2.0	73	ssw.	4	690	−9.3	80	nw.	1	604	−17.1	99	w.	3	528	−24.3	99	w.	2
21	1,004	1.8	95	ene.	1	960	4.2	86	sc.	2	903	3.3	67	w.	1	797	−4.1	97	w.	9	701	−12.6	100	w.	10	614	−15.3	56			538	−21.8	49		
24	995	7.8	80	nne.	1	951	8.0	72	e.	4	895	4.1	82	e.	2	791	−2.0	100	sw.	1	695	−8.3	98	s.	3	610	−12.4	90			535	−18.3	94		
27	1,017	4.5	90			972	1.8	95			914	−0.6	100			806	−1.2	64			709	−8.1	75			623	−13.9	52			545	−21.7	45		
30	1,011	−1.0	100	se.	2	966	0.6	80	e.	6	908	−0.4	66	e.	5	801	−0.8	38	e.	4	705	−6.0	22	ne.	5	619	−12.4	18	n.	7	543	−12.7	40	nnw.	14

ADDENDA, AIRPLANE OBSERVATIONS

Date	6,000 meters	
	D	V
18	sse.	1
30	n.	20

TABLE 4.—*Free-air data for standard levels above sea level obtained by means of airplane, radiosonde and pilot-balloon observations, winter 1937–38*

[For times of ascents, see table 1A]

P=Pressure in millibars. D=Wind direction.
T=Temperature in degrees centigrade. V=Wind velocity, meters per second.
R=Relative humidity.

OCTOBER 1937

RADIOSONDE OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
9	1,008	0.0	56	ene.	3	961	−3.4	64	e.	8	903	−6.1	68	e.	7	793	−5.7	68	ese.	8	699	−8.2	52	e.	5	613	−12.2	46	ne.	9				ne.	10
10	1,004	2.1	43	e.	6	960	2.9	56	e.	13	902	3.8	74	ese.	14	799	2.1	76	ese.	14	703	−5.0	23	ese.	12	618	−12.1	15	ese.	11	542	−17.3	22		
11				ene.	2				e.	8				ese.	9				s.	7				wsw.	9				w.	11				w.	10
12	990	3.3	57	nnw.	3	947	4.8	62	ese.	4	891	2.0	63	ese.	5	788	4.6	61	nne.	2	695	−.8	60	s.	2	612	−8.7	53	se.	8				sse.	6
13	988	−1.7	90	ne.	1	942	−.5	79	e.	3	886	.2	73	e.	7	783	1.5	61	se.	6	691	−2.0	48	s.	4				s.	5				sw.	6
14				sse.	2				ne.	3				ne.	2				wnw.	3				s.	4				s.	4				sse.	7
15	984	4.4	68	se.	2	942	5.5	58	ene.	2	886	4.2	49	ene.	5	782	−5.6	47	e.	6				ene.	6				e.	5				se.	3
16	976	0.	83	w.	2	931	.2	85	ne.	1	876	−.3	82	ene.	4	772	−7.1	88	e.	4															
17	980	−.1	93			936	−1.0	95		2	880	−2.2	99			775	.3	100																	
18				Calm.	0				ene.	2																									
19				ne.	2				e.	5				se.	4				ssw.	7				ssw.	5										
20				ene.	1				e.	7				ese.	9				se.	9				ese.	6				se.	7				s.	11
21				sse.	1				se.	7				se.	7				s.	12				ssw.	10										
22				ene.	2				e.	4				se.	5				s.	3				ssw.	6				ssw.	8				ssw.	8
23				wsw.	2				ese.	1				e.	6				wsw.	2				ssw.	5				wsw.	5				sw.	9
24	980	−.5	78	nne.	1	936	2.5	85	e.	2	880	5.3	85	e.	4	777	−2.4	68	ese.	3	684	−11.9	85	se.	5	598	−19.6	59	sse.	5					
25	977	−2.8	88	ssw.	2	933	−1.3	74	e.	4	877	−2.8	75	se.	8	771	−5.3	83	sw.	10	678	−8.8	75	ssw.	10	597	−10.4	80	ssw.	9	523	−14.1	79		
26	985	−5.6	95	Calm.	0	940	−1.0	67	ese.	2	884	.5	53	sw.	5	780	−2.8	53	ssw.	7				wnw.	8				wsw.	9				sw.	9
27	984	−6.1	95	nnw.	1	939	−3.6	88	e.	4	881	−.4	80	ene.	4				ene.	4				wsw.	1				Calm.	0				n.	2
28				e.	1				ne.	1				sw.	1				se.	3				wsw.	3				w.	9				w.	11
29				Calm.	0				n.	2				ese.	2				wsw.	2				wnw.	4				wnw.	5				nw.	7
30	993	−11.7	90	n.	1	948	−4.9	62	ene.	5	890	−5.1	61	ese.	5	782	−5.9	59	ese.	5	688	−8.9	52	e.	2	604	−13.4	49	ene.	4	528	−20.6	40	ene.	7
31	992	−7.8	88	se.	2	947	1.5	88	e.	7	890	−.8	87	ese.	12	784	−5.4	83	ese.	4	689	−9.7		ese.	8	605	−13.7		se.	10					

AIRPLANE OBSERVATIONS

3	997	3.6	97			952	2.6	100			896	1.7	100			791	−0.3	100			697	−5.6	97			612	−11.9	90			536	−18.4	84		
7	1,003	−0.2	80	nnw.	2	957	−1.0	87	n.	2	899	−1.9	85	nnw.	2	791	−6.0	74	wnw.	3	695	−8.9	35	w.	6	610	−14.9	25	wsw.	9	534	−21.8	22	wsw.	16
9	1,008	−4.0	100	n.	1	962	−2.3	64	ene.	7	903	−3.5	58	e.	7	796	−4.5	42	ene.	7	701	−10.0	32	ne.	6	614	−14.2	24	ne.	10	538	−20.6	25	ne.	12
12	991	0.5	82	nnw.	3	948	4.5	70	ese.	4	891	4.8	58	ese.	5	789	5.9	50	nne.	2	696	−1.0	40	s.	2	613	−8.4	41	se.	8	539	−16.6	48	sse.	6
15	985	1.0	93	nne.	2	941	2.7	75	ene.	5	885	2.4	77	ene.	5	781	−0.4	50	e.	5	688	−8.4	68	e.	4	604	−15.6	69	e.	5	527	−23.1	61	e.	2
18	981	0.0	100	calm	0	938	−0.9	82	ene.	2	880	−2.9	100			775	−5.1	97			681	−12.8	92			598	−17.4	53			522	−23.2	64		
21	976	−3.0	86	calm	0	933	3.5	59	e.	7	877	2.4	58	se.	5	774	−3.0	58	sw.	11	680	−11.2	87	s.	14	596	−17.4	68			522	−25.4	75		
24	980	−5.0	100	nne.	1	936	2.1	68	e.	2	880	0.5	65	e.	4	775	−4.6	67	ese.	3	682	−12.2	76	se.	5	598	−20.1	86	sse.	5	521	−28.0	60		
27	984	−7.8	100	nnw.	1	941	1.8	70	e.	4	883	1.5	62	ene.	4	779	−4.9	61	ene.	4	684	−12.9	69	wsw.	1	599	−17.0	41	calm	0	524	−25.0	32	n.	2
30	993	−15.0	92	nnw.	1	948	−5.4	80	ene.	4	890	−1.8	54	e.	4	782	−5.0	40	e.	6	688	−11.3	41	ene.	2	604	−17.7	38	ne.	4	527	−25.7	36		

ADDENDA, AIRPLANE OBSERVATIONS

Date	6,000 meters	
	D	V
9	nne.	15
15	se.	3
27	nw.	3

ADDENDA, RADIOSONDE OBSERVATIONS

Date	6,000 meters		7,000 meters		8,000 meters	
	D	V	D	V	D	V
9	nne.	15				
11	wsw.	9				
13	ssw.	12				
14	s.	10				
15	ssw.	4	wsw.	17	sw.	22
22	ssw.	8	sse.	8		
23	wsw.	13	wsw.	9	ssw.	7
26	wsw.	8	wnw.	6	wnw.	5
27	nw.	3				
28	wnw.	12	wnw.	14		
29	nnw.	11	nw.	12		
30	ne.	7	ene.	5	ene.	5

TABLE 4.—*Free-air data for standard levels above sea level obtained by means of airplane, radiosonde and pilot-balloon observations, winter 1937–38*—Continued

NOVEMBER 1937

RADIOSONDE OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	-----	-----	---	n.	2	---	-----	---	ene.	5	---	-----	---	e.	7	---	-----	---	sse.	2	---	-----	---	sw.	5	---	-----	---	sw.	16	---	-----	---	sw.	25
2	-----	-----	---	ne.	2	---	-----	---	e.	7	---	-----	---	se.	9	---	-----	---	s.	7	---	-----	---	s.	6	---	-----	---	s.	11	---	-----	---	s.	12
3	-----	-----	---	ene.	1	---	-----	---	se.	4	---	-----	---	sw.	13	---	-----	---	sw.	12	---	-----	---	se.	2	---	-----	---	---	---	---	-----	---	---	---
5	984	−5.3	95	wsw.	2	938	−2.4	78	se.	4	880	−4.0	68	s.	4	775	−11.0	68	ssw.	13	680	−18.1	68	ssw.	6	593	−25.1	66	ssw.	6	---	-----	---	wsw.	10
6	983	−10.6	94	n.	1	937	−5.4	85	ese.	3	880	−6.7	79	se.	2	771	−14.9	69	s.	6	675	−21.3	69	s.	7	588	−25.6	---	ssw.	9	513	−31.2	---	s.	10
7	982	−11.1	93	-----	---	937	−9.3	55	-----	---	878	−8.7	62	-----	---	770	−13.4	74	-----	---	675	−15.9	79	-----	---	590	−20.3	72	-----	---	514	−28.3	74	-----	---
8	-----	-----	---	sse.	1	---	-----	---	w.	3	---	-----	---	wnw.	6	---	-----	---	wnw.	10	---	-----	---	wnw.	10	---	-----	---	-----	---	---	-----	---	-----	---
9	-----	-----	---	nne.	1	---	-----	---	ese.	7	---	-----	---	sse.	7	---	-----	---	sw.	5	---	-----	---	wsw.	9	---	-----	---	w.	13	---	-----	---	wnw.	14
10	993	−1.9	90	ene.	1	948	−1.4	90	ese.	7	891	−0.8	90	sse.	8	785	0.5	90	w.	10	693	0.3	88	-----	---	611	−5.1	78	-----	---	538	−9.8	76	-----	---
11	-----	-----	---	calm	0	---	-----	---	ese.	6	---	-----	---	ese.	10	---	-----	---	ssw.	9	---	-----	---	s.	12	---	-----	---	s.	18	---	-----	---	-----	---
12	999	−9.6	94	ne.	1	953	−7.0	58	ese.	4	894	−5.7	48	se.	5	787	−6.6	42	sw.	8	692	−10.0	36	wsw.	9	607	−16.5	48	sw.	19	531	−20.5	43	-----	---
13	1004	−14.8	92	se.	2	957	−8.0	79	ssw.	1	898	−2.0	60	se.	3	703	−1.3	48	s.	4	699	−2.3	38	sse.	5	615	−6.3	38	-----	---	541	−12.2	37	-----	---
14	1011	−13.4	92	nc.	1	964	−10.0	56	sw.	2	903	−8.1	63	wsw.	3	795	−4.0	50	-----	---	701	−4.0	68	-----	---	616	−6.4	48	-----	---	543	−10.7	36	-----	---
15	1014	−7.9	93	nnw.	2	966	−8.1	87	e.	7	907	−6.4	84	ese.	8	799	−5.7	58	ene	12	703	−6.2	51	e.	7	617	−10.2	38	se.	2	543	−13.5	40	-----	---
16	1008	−7.9	98	wsw.	1	961	−7.0	92	wnw.	1	901	−5.7	83	s.	2	795	−4.0	50	-----	---	-----	-----	---	-----	---	-----	-----	---	-----	---	-----	-----	---	-----	---
17	1012	−17.3	87	nw.	3	963	−13.6	80	ene.	5	903	−10.1	76	e.	6	794	−8.7	66	ene.	10	698	−8.0	38	-----	---	611	−14.7	32	-----	---	536	−22.0	30	-----	---
18	-----	-----	---	calm	0	---	-----	---	ene.	5	---	-----	---	e.	8	---	-----	---	ene.	13	---	-----	---	ene.	12	---	-----	---	-----	---	---	-----	---	-----	---
19	1005	−21.1	84	e.	1	957	−12.0	54	ne.	9	896	−12.7	55	ene.	10	787	−14.5	54	ene.	11	688	−17.6	52	ne.	13	602	−21.5	47	-----	---	524	−27.5	41	-----	---
20	1011	−18.8	57	ne.	5	962	−16.1	50	ene.	10	900	−18.7	51	ene.	17	-----	-----	---	ene.	19	-----	-----	---	-----	---	-----	-----	---	-----	---	-----	-----	---	-----	---
21	1002	−17.4	59	nne.	3	954	−18.2	49	ene.	10	892	−18.8	44	ese.	14	781	−16.8	50	e.	12	683	−21.0	62	ssw.	4	594	−29.6	64	-----	---	516	−37.2	62	-----	---
22	993	−19.4	68	ne.	4	943	−14.9	42	ene.	11	886	−11.1	26	e.	11	779	−8.4	24	ene.	12	682	−11.2	---	ene.	11	599	−18.6	---	e.	7	-----	-----	---	-----	---
23	986	−17.5	88	nne.	1	940	−14.5	77	ene.	10	882	−10.2	60	e.	12	775	−7.5	67	e.	22	680	−8.9	70	-----	---	595	−14.3	76	-----	---	522	−22.7	73	-----	---
24	-----	-----	---	ne.	8	---	-----	---	ene.	3	---	-----	---	e.	15	---	-----	---	e.	16	---	-----	---	sse.	26	---	-----	---	-----	---	---	-----	---	-----	---
25	-----	-----	---	e.	3	---	-----	---	e.	13	---	-----	---	ese.	16	---	-----	---	e.	17	---	-----	---	e.	17	---	-----	---	e.	12	---	-----	---	-----	---
26	989	−11.6	50	e.	4	942	−12.2	38	e.	11	883	−9.9	39	ese.	10	777	−9.0	40	se.	8	681	−15.1	40	-----	---	595	−21.0	40	-----	---	519	−27.0	39	-----	---
27	983	−10.9	76	se.	3	940	−5.1	50	n.	1	881	−6.8	58	se.	9	775	−9.1	74	sse.	3	678	−15.5	86	se.	10	593	−22.9	87	-----	---	515	−30.5	87	-----	---
28	-----	-----	---	calm	0	---	-----	---	e.	7	---	-----	---	se.	10	---	-----	---	ssw.	8	---	-----	---	sw.	9	---	-----	---	-----	---	---	-----	---	-----	---
29	987	−16.7	97	nnw.	2	941	−6.0	86	ese.	4	883	−5.1	85	se.	8	---	-----	---	s.	6	---	-----	---	ssw.	11	---	-----	---	sw.	5	---	-----	---	-----	---
30	985	−13.3	92	-----	---	940	−9.7	73	-----	---	881	−11.0	82	-----	---	774	−12.9	97	-----	---	678	−16.9	97	-----	---	592	−24.5	93	-----	---	---	-----	---	-----	---
Mean	996	−13.0	84	-----	---	950	−9.5	67	-----	---	890	−8.5	64	-----	---	783	−9.1	60	-----	---	687	−12.1	60	-----	---	602	−17.8	57	-----	---	527	−23.9	55	-----	---

AIRPLANE OBSERVATIONS

2	982	0.7	69	ene.	2	938	4.5	52	e.	11	882	0.7	58	ese.	9	778	−2.4	61	ssw.	2	684	−9.8	69	s.	11	602	−15.4	53	s.	9	525	−23.0	57	sse.	9
5	984	−7.0	98	e.	1	939	−3.2	91	e.	4	880	−4.7	68	ssw.	5	774	−12.6	88	sw.	8	678	−19.1	80	-----	---	593	−26.7	62	-----	---	515	−35.5	59	-----	---
8	999	−19.4	89	nw.	1	953	−10.2	57	nnw.	6	892	−9.9	69	nnw.	7	784	−15.1	82	nnw.	8	685	−22.0	80	nnw.	12	596	−28.8	69	nnw.	11	518	−36.2	56	-----	---
11	993	−4.4	95	calm	0	949	1.0	57	ese.	6	892	2.5	48	ese.	10	790	4.1	34	ssw.	9	698	−0.2	64	s.	12	613	−7.2	87	s.	18	539	−14.0	90	-----	---
14	1,011	−13.8	100	ne.	1	965	−7.5	100	sw.	2	906	−3.2	100	wsw.	3	797	−2.5	53	-----	---	703	−3.3	71	-----	---	618	−7.0	44	-----	---	544	−13.1	33	-----	---
17	1,012	−14.4	95	nw.	3	967	−8.6	75	ene.	5	905	−7.8	73	e.	6	796	−7.7	66	ene.	10	700	−6.7	39	-----	---	614	−13.0	28	-----	---	538	−20.3	28	-----	---
20	1,011	−19.0	49	nne.	4	964	−17.3	50	ene.	10	902	−18.6	50	ene.	17	787	−23.1	54	ene.	18	686	−28.7	55	-----	---	596	−32.7	51	-----	---	515	−38.8	49	-----	---
23	986	−15.6	75	nnw.	2	940	−9.0	61	ene.	8	882	−8.3	63	e.	13	776	−4.9	67	e.	14	682	−9.2	68	e.	11	597	−16.6	75	-----	---	523	−23.6	66	-----	---
26	989	−11.4	53	e.	4	942	−7.8	50	e.	10	884	−11.4	51	ese.	9	778	−5.4	49	-----	---	684	−13.7	50	-----	---	599	−21.7	53	-----	---	523	−30.1	53	-----	---
29	987	−19.8	87	nnw.	2	942	−3.9	63	ese.	4	883	−3.0	60	se.	8	776	−8.6	52	s.	6	682	−16.5	63	ssw.	11	596	−24.7	73	sw.	5	518	−32.7	73	-----	---

ADDENDA, RADIOSONDE OBSERVATIONS

Date	6,000 meters	
	D	V
1	sw.	29
2	s.	11
5	w.	9

TABLE 4.—*Free-air data for standard levels above sea level obtained by means of airplane, radiosonde and pilot-balloon observations, winter 1937–38*—Continued

DECEMBER 1937

RADIOSONDE OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	1,004	−12.4	92	se.	2	957	−9.9	59	wsw.	3	898	−16.0	66	wsw.	6	786	−18.8	76	nnw.	6	683	−22.6	81	nnw.	9	596	−26.7	81	nnw.	10	519	−29.0	77		
2				ene.	1				sw.	1				sw.	5				sw.	4															
3	1,013	−31.6	83	ne.	1	963	−24.2	45	ene.	4	900	−21.2	48	ene.	5	785	−24.9	49			684	−27.0	48			593	−31.4	44			515	−36.8	42		
4				ene.	6				ene.	12				e.	11				e.	20				e.	28									
5	992	−13.5	72	sse.	2	946	−14.8	60	ene.	3	885	−12.5	60	ese.	8	779	−9.8	71	e.	11	683	−11.2	81			598	−15.8	83			522	−23.7	80		
6	1,009	−23.3	87	nw.	2	962	−12.0	69	ene.	6	901	−16.0	60	se.	8	790	−17.2	61	ssw.	6	688	−17.2	63	wsw.	8	603	−22.9	65							
7	1,015	−18.6	90	nnw.	1	970	0.3	58	e.	3	913	1.2	60	se.	2	803	−2.2	66	nnw.	6	706	−7.6	64	n.	4	622	−11.5	46	wnw.	5	544	−16.7	39	nw.	8
8	1,016	−11.1	78	nne.	4	969	−7.3	61	e.	11	910	−4.6	38	e.	10	801	−3.9	25	e.	12	703	−6.5	23	e.	14	617	−15.7	18			540	−22.0	17		
9	1,017	−17.9	36	ene.	4	970	−18.0	38	ene.	13	908	−17.8	41	e.	17	794	−21.0	41	e.	20	690	−25.6	38	ene.	24	603	−28.4	37			523	−30.0	35		
10	1,003	−24.4	55	ene.	4	954	−22.7	42	ene.	6	892	−26.5	37	ene.	15	776	−32.6	39	e.	20	673	−35.1	42			582	−36.6	38							
11	991	−26.2	49	ene.	1	942	−27.6	45	e.	10	880	−29.3	40	ese.	11	767	−31.1	37	e.	10	665	−27.4	36	wsw.	6	577	−29.0	43			501	−35.0	42		
12	998	−29.5	76	n.	1	950	−18.1	34	e.	4	888	−13.2	40	e.	8	781	−15.3	42	ssw.	5	682	−20.2	36	nw.	10	595	−22.8	34	wnw.	5	517	−28.7	34	wnw.	5
13	993	−31.2	82	wnw.	1	946	−24.7	48	e.	7	885	−16.6	38	e.	14	775	−14.4	31	e.	16	677	−16.4	25	e.	16	591	−21.6	23			515	−31.0	20		
14	969	−18.1	88	nw.	2	925	−14.8	74	ne.	4	865	−10.6	56	e.	8	760	−8.5	60	ssw.	4	668	−13.4	66	s.	6	584	−18.6	75			509	−26.6	70		
15	975	−19.9	90	n.	2	929	−14.9	86	ene.	5	871	−8.9	79	ese.	5	765	−7.7	73	s.	5	672	−15.3	73	sw.	7	596	−24.5	75	w.	5	510	−32.8	78		
16	980	−26.7	88	nnw.	2	934	−19.1	83	e.	2	875	−9.9	70	se.	8	768	−11.5	69	sw.	5	673	−15.9	65	wsw.	6	586	−24.6	62	wsw.	6	510	−32.6	60		
17	980	−26.1	86	nnw.	2	933	−11.6	59	e.	4	875	−7.9	54	se.	9	770	−8.7	56	s.	2	676	−12.8	60	se.	3	590	−17.9	59			515	−29.8	51		
18	979	−15.0	93	n.	1	935	−10.8	84	e.	7	876	−7.0	73	se.	9	770	−7.1	65	ssw.	12	676	−10.6	70			593	−16.1	76			516	−17.7	74		
19	976	−6.4	99	ene.	1	932	−1.4	82	s.	6	876	3.0	63	ssw.	13	773	−2.0	63	ssw.	21	679	−6.9	64			598	−10.8	67			522	−16.3	60		
20	1,008	−7.2	76	w.	9	960	−9.6	84	w.	15	903	−12.4	94	w.	30	792	−16.3	88	w.	20	690	−22.8	89			603	−28.1	88			522	−34.5	86		
21	1,034	−12.8	90			987	−13.6	66			925	−14.3	74			809	−18.1	80			705	−23.7	80			615	−22.3	85			537	−25.7	83		
22	1,033	−5.1	84	wsw.	4	988	−6.6	86	w.	4	927	−7.2	87	nw.	10	814	−12.2	60	nw.	15	710	−19.7	47			619	−22.7	42			540	−27.4	40		
23	1,019	−10.4	96			972	−10.6	85			913	−9.7	70			799	−13.6	51			700	−17.5	43			610	−22.5	42			533	−28.0	44		
24	1,013	−26.1	84	ne.	2	964	−21.6	75	e.	5	903	−18.5	67	e.	8	787	−22.5	63	ene.	9	684	−25.8	60	ene.	10	595	−31.7	52			517	−39.6	46		
25	1,010	−27.2	82	calm	0	959	−24.6	77	wsw.	2	898	−21.5	70	wnw.	2	785	−18.0	60	nne.	6	684	−23.5	66			595	−28.9	70			516	−35.5	74		
26	996	−30.0	81	calm	0	948	−23.1	49	n.	2	885	−23.0	47	nne.	3	772	−25.3	48			672	−28.5	46			583	−35.0	44			504	−39.7	42		
27	1,007	−26.6	82	nne.	1	957	−25.6	53	ne.	8	894	−25.3	38	ene.	14	779	−29.9	37	ne.	10	675	−34.6	38													
28	1,005	−30.3	74	ese.	2	955	−29.1	55	ene.	9	891	−27.8	34	ene.	14	776	−28.5	38	ene.	16	675	−29.7	30			586	−29.3	33							
29	999	−27.9	52	ne.	4	949	−29.0	49	ene.	9	884	−30.2	45	e.	8	769	−35.1	38	ene.	22																
30	994	−28.9	65	ene.	1	945	−28.8	65	e.	7	881	−28.5	65	e.	11	769	−25.2	48	e.	10	670	−23.3	51			582	−31.4	44			505	−37.5	42		
31	995	−31.6	75	wnw.	1	946	−28.4	70	ene.	6	882	−24.2	63	e.	11	772	−19.7	51	ne.	11	674	−21.4	44	ne.	8	584	−29.6	35			508	−37.2	32		
Mean	1,001	−21.2	79			953	−17.3	64			892	−15.7	58			782	−17.3	55			682	−20.8	54			595	−25.6	53			518	−31.7	51		

AIRPLANE OBSERVATIONS

2	1,012	−16.9	98	ene.	1	964	−17.4	99	sw.	1	901	−18.8	100	sw.	5	789	−20.2	96	sw.	4	688	−23.2	82			600	−28.9	61			520	−35.8	57		
5	992	−13.9	68	sse.	2	945	−14.2	71	ene.	3	885	−11.4	83	ese.	8	776	−8.5	100	e.	11	681	−12.0	96			598	−17.0	95			522	−24.0	86		
8	1,016	−8.1	73	nne.	4	970	−3.1	57	e.	11	911	−2.8	46	e.	10	802	−2.5	30	e.	12	706	−8.9	24	e.	14	619	−15.3	21			542	−22.0	21		
11	991	−24.0	58	ne.	3	941	−24.2	54	ene.	14	879	−28.3	54	e.	14	763	−35.2	57	ene.	20	661	−35.2	56			572	−36.8	48							
14	969	−18.2		nw.	2	924	−12.5		ne.	4	867	−9.8		e.	8	761	−7.3		ssw.	4	668	−14.9		s.	6	585	−20.5									
18	979	−15.4	91	n.	1	934	−3.2	63	e.	7	878	0.6	55	se.	9	773	−6.6	62	ssw.	12	679	−13.5	73			595	−18.6	76							
20	1,006	−4.1	94	w.	9	959	−6.7	98	w.	15	900	−10.1	100	w.	30	790	−13.9	93	w.	20	691	−19.6	97			603	−26.2	96			525	−33.2	94		
24	1,013	−29.8	81	ne.	2	965	−14.8	83	e.	5	904	−15.4	82	e.	8	790	−19.9	80	ene.	9	689	−23.5	68	ene.	10	601	−28.6	53			522	−34.2	47		
26	994	−24.3	63	calm	0	945	−21.9	66	n.	2	884	−19.8	66	nne.	3	771	−22.0	65			673	−29.2	66			584	−34.8	60			506	−36.5	52		
29	1,001	−30.2	61	nne.	4	951	−31.9	62	ene.	9	886	−33.4	63	e.	16	769	−29.4	64	ene.	16	668	−31.2	59	ene.	10	579	−36.9	59							

ADDENDA, RADIOSONDE OBSERVATIONS

Date	6,000 meters	
	D	V
12	wsw.	11

TABLE 4.—*Free-air data for standard levels above sea level obtained by means of airplane, radiosonde and pilot-balloon observations, winter 1937–38*—Continued

JANUARY 1938

Radiosonde Observations

Date	Surface, 136 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	991	−41.0	75	nw.	1	941	−37.0	69	e.	4	877	−32.1	60	e.	7	762	−21.9	52	ne.	8	664	−25.7	49	nne.	5	578	−30.7	48			501	−35.5	42		
2	983	−39.5	76	wnw.	1	934	−27.1	57	e.	4	872	−16.5	44	ese.	8	764	−16.6	31			668	−21.9	26			581	−26.4	22			506	−29.5	21		
3	980	−26.7	82	ene.	2	931	−24.2	81	ese.	5	871	−21.0	80	sw.	8	761	−18.2	79	sw	20	665	−27.0	70			576	−36.3	74			498	−43.7			
4	989	−23.3	83			941	−16.8	49			881	−19.3	54			771	−18.2	65			675	−14.7	78			589	−22.1	77			514	−29.3	74		
5	985	−20.5	85	nw.	2	940	−3.2	52	e.	9	881	−2.7	48	se.	11	778	−4.5	45	sse.	6	683	−9.4	46	ssw.	12	600	−14.0	55	s.	12	524	−20.5	50		
6	977	−9.5	90	wnw	3	934	2.1	67	ese.	7	878	0.7	62	s.	9	774	−3.2	67	sw.	13	680	−12.5	79			595	−18.5	70			518	−26.9	74		
7	975	−8.3	95	nw.	2	931	−4.5	82	e.	6	874	0.2	67	ese.	8	771	−6.0	53	s.	13	676	−15.9	50	ssw.	18	590	−21.9	49	sw.	14	515	−27.6	50		
8	981	−16.5	94	nne.	2	938	−2.6	70	e.	7	880	−1.0	62	ese.	8	775	−4.9	52	sse.	4	681	−12.3	58	s.	12	596	−18.0	60	ssw.	10	523	−25.0	58	ssw.	14
9	1,004	−17.1	75	w.	7	956	−20.5	85	wsw.	11	894	−22.5	90			781	−22.7	87			680	−23.0	82			593	−25.9	79			516	−31.4	72		
10	1,022	−37.1	76	e.	1	970	−24.1	70	se.	2	908	−24.1	72	wsw.	6	793	−22.3	73	w.	11	690	−23.0	60	nw.	5	610	−25.0	50							
11	1,003	−32.7	79	ssw.	2	955	−20.8	48	ene.	7	891	−20.1	48	ese.	10	782	−16.4	42	e.	6	682	−17.6	31	n.	7	596	−20.4	22	nw.	12	520	−23.8	21	sw.	15
12	994	−35.5	78	e.	2	944	−30.8	63	ene.	6	880	−24.9	46	e.	11	778	−22.0	41	e.	15	668	−27.0	38	ne.	14	582	−25.4	37	n.	16	509	−27.5	32		
13	986	−40.2	76	se.	1	936	−32.9	61	ene.	6	871	−27.0	52	e.	11	760	−22.9	49	ene.	10	661	−26.2	41			576	−28.9	37			501	−31.9	32		
14	982	−38.8	76	n.	2	932	−34.1	70	ene.	5	870	−28.2	63	e.	7	757	−23.7	61	e.	9	659	−25.7	49	s.	3	572	−27.7	43	sw.	16	490	−32.5	47		
15	979	−28.2	80	n.	1	933	−18.5	68	ene.	2	871	−11.2	50	se.	9	764	−16.0	46	sw.	12	668	−23.1	58	sw.	14	580	−27.0	63			506	−30.2	58		
16	970	−10.1	70	wsw.	2	925	−8.6	66	ese.	6	869	−6.7	61	se.	7	761	−9.4	60	sw.	15	669	−14.0	61	sw.	9	585	−17.9	65			511	−25.8	65		
17	976	−23.8	84	n.	2	930	−5.6	70	e.	3	872	−4.8	60	se.	10	766	−14.1	54	sw.	4	669	−23.6	54	s.	5	582	−31.2	51			505	−40.0	51		
18	980	−25.7	83	e.	1	933	−13.1	73	ese.	2	875	−7.3	65	sse.	8	770	−11.3	65	ssw.	10	674	−19.2	66	ssw.	11	586	−29.1	60	s.	7	510	−31.4	60		
19	984	−22.6	84	w.	1	939	−9.0	84	se.	1	880	−10.1	86	sw.	4	771	−16.7	87	sw.	7	671	−20.6	76	wsw.	9	584	−25.8	73			510	−31.7	72		
20	977	−19.8	86			931	−23.1	68			870	−24.2	60			757	−25.3	68			658	−29.1	71			570	−37.3	68			495	−42.1			
21	982	−22.2	83	se.	1	936	−23.1	81	e.	1	874	−23.7	86	ne.	3	760	−25.5	89			662	−27.5	90			576	−30.0	93			499	−36.0	90		
22	1,002	−24.3	81			955	−23.6	60			891	−22.0	58			780	−16.9	55			680	−22.6	52			593	−27.4	54			515	−32.1	53		
23	1,013	−29.9	82	calm	0	961	−28.5	63	e.	1	899	−26.8	63	wsw.	2	785	−25.1	60	w	6	682	−28.2	50	w.	6	591	−34.0	45			511	−41.0			
24	1,015	−39.3	76	calm	0	962	−29.7	68	e.	2	900	−26.4	77	se.	4	784	−26.9	73	nne.	3	681	−30.5	64	ne.	9	590	−34.3	56			511	−39.3	51		
25	1,013	−40.1	78	nne.	1	961	−26.5	64	e.	4	900	−18.9	50	ene.	6	787	−20.2	39			685	−25.8	35			595	−30.6	31			517	−36.0	30		
26	1,013	−34.8	77	nne.	2	961	−22.5	59	e.	10	900	−11.4	41	e.	12	791	−10.4	34	e.	14	692	−11.7	29			609	−14.1	27			532	−20.8	25		
27	1,015	−33.4	80	wnw.	2	968	−20.5	67	ese.	3	904	−9.0	49	ese.	7	795	−7.4	28	ne.	2	696	−15.5	20	ese.	2	610	−20.7	21	e.	1	532	−25.6	21		
28	1,022	−33.4	80	e.	1	972	−24.0	72	ese.	2	911	−19.0	63	ese.	8	798	−14.6	45	e.	6	695	−19.8	35	e.	5	607	−25.5								
29	1,021	−33.9	81	nnw.	2	972	−22.5	59	ene.	1	909	−16.7	49	ese.	5	796	−11.4	30	e.	5	696	−14.9	22	ese.	4	609	−18.9		n.	5	534	−21.6			
30	1,018	−20.6	84	e.	2	972	−20.5	76	sw.	3	910	−20.5	72			796	−21.0	71			693	−21.5	70			606	−23.2	58			528	−29.2	46		
31	1,017	−22.4	86	n.	1	969	−19.4	84	n.	2	907	−18.2	85	ne.	2	795	−19.9	76	ne.	11	689	−27.1	61	ne.	12	600	−32.8	52			518	−41.1			
Means	995	−27.5	81			947	−19.9	68			886	−16.7	62			776	−16.7	57			677	−21.3	53			590	−26.0	50			514	−31.5	48		

Date	6,000 meters					7,000 meters					8,000 meters					10,000 meters					12,000 meters					14,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	434	−38.0	40																											
2	439	−33.8	20			381	−37.5	20			330	−39.3	20																	
3	429	−48.7				367	−52.7				315	−53.6																		
4	446	−37.0	72																											
5	457	−26.0	46			397	−34.3	46			344	−40.6																		
6	450	−34.5	65																											
7	447	−35.0	52			387	−40.9				334	−49.0				244	−51.2													
8			s.		14																									
9	446	−37.0	70			386	−41.9																							
11	454	−28.0	20			395	−31.8	20			343	−36.0	20																	
12	441	−34.1	30			382	−38.4	30			332	−44.4																		
13	433	−38.8	30			373	−46.0				322	−51.4																		
15	440	−35.0	58																											
16	444	−32.8	65			384	−39.5	65			333	−41.8				246	−50.7				180	−58.0				131	−55.0			
17	435	−48.5				373	−52.0																							
18	442	−38.2				381	−47.3																							
19	440	−37.7	70			380	−43.7				328	−48.2																		
21	431	−39.9	88																											
22	446	−37.2	53			385	−41.5				333	−45.4																		
23	442	−46.4																												
24	441	−41.9				380	−44.6				329	−45.0																		
25	447	−40.4				385	−44.5				332	−47.1																		
26	464	−26.4	25			404	−29.0	25																						
27	462	−31.3	22			401	−36.9	22																						
29	465	−26.8				404	−33.1																							
30	457	−35.0	40			396	−38.2	39			342	−42.8																		
Mean	446	−37.1	46			385	−42.2																							

AIRPLANE OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	991	−41.8	33	nw.	1	941	−26.3	35	e.	4	878	−23.7	36	e.	7	766	−21.4	34	ne.	8	668	−26.2	34	nne.	5	581	−32.6	36							
5	986	−20.6	76	nw.	2	941	−3.1	64	e.	9	882	−3.7	61	se.	11	777	−6.1	51	sse.	6	683	−13.8	63	ssw.	12	597	−18.8	76	s.	12					
7	975	−10.5	90	ese.	1	931	3.8	56	se.	7	875	2.3	50	ssw.	12	772	−5.8	46	ssw.	19	678	−15.1	55			593	−22.5	62			517	−27.5	68		
10	1,022	−36.4	57	e.	1	971	−25.9	61	se.	2	907	−25.3	65	wsw.	6	790	−22.2	73	w.	11	690	−24.2	56	nw.	5	601	−27.4	48			522	−32.4	42		
13	986	−41.6	54	se.	1	937	−22.1	55	ene.	6	876	−20.6	54	e.	11	766	−17.6	47	ene.	10	668	−22.6	38			583	−24.5	35							
17	975	−26.4	77	n.	2	929	−4.2	61	e.	3	872	−3.7	53	se.	10	767	−8.8	41	sw.	4	673	−16.9	42	s.	5	587	−24.6	45			512	−32.3	54		
19	984	−24.3	76	w.	1	937	−20.1	83	se.	1	876	−6.8	72	sw.	4	769	−13.0	87	sw.	7	674	−20.8	84	wsw.	9	586	−29.3	87			509	−36.8	80		
22	1,000	−24.9	71			951	−26.6	76			888	−23.9	87			776	−19.7	78			677	−24.0	53			588	−30.4	44			512	−36.2	40		
25	1,013	−40.8	60	nne.	1	963	−18.4	63	e.	4	900	−14.9	56	ene.	6	790	−16.3	40			690	−21.2	38			602	−26.4	36			523	−32.6	33		
28	1,022	−34.5	60	e.	1	973	−17.4	62	ese.	2	911	−12.0	52	ese.	8	799	−9.5	36	e.	6	702	−13.8	28	e.	5	613	−21.3	26			535	−27.5	36		
31	1,016	−19.9	88	n.	1	967	−16.0	91	n.	2	905	−18.6	92	ne.	2	792	−19.5	90	ne.	11	690	−27.2	65	ne.	12	600	−33.3	73			518	−40.8			

TABLE 4.—*Free-air data for standard levels above sea level obtained by means of airplane, radiosonde and pilot-balloon observations, winter 1937–38*—Continued

FEBRUARY 1938

RADIOSONDE OBSERVATIONS

Date	Surface, 136 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	1,021	−20.5	86			973	−21.5	69			911	−16.3	89			796	−19.2	55			692	−24.0	49			602	−30.1	44			523	−35.4	44		
2																																		
3	1,010	−36.7	79	n.	2	960	−27.2	63	n.	2	897	−26.4	61	nw.	2	780	−27.8	59	nnw.	4	677	−31.0	52	nnw.	8	586	−35.2	49			508	−40.5			
4	1,016	−34.6	79	ne.	2	967	−26.6	63	ne.	7	903	−23.0	51	ene.	13	787	−25.3	52	ene.	17														
5	1,023	−41.8	77	wnw.	1	972	−36.0	71	ene.	4	905	−29.6	69	ene.	8	787	−30.5	67	ene.	8	683	−31.2	65			591	−36.4				511	−42.1			
6	1,020	−40.0	77	calm	0	971	−23.3	51	ene.	2	907	−21.8	50	ene.	5	792	−23.7	43	ne.	12	688	−25.2	34			600	−29.3	30			521	−34.8	27		
7	1,010	−41.7	78	calm	0	959	−30.8	73	e.	5	894	−23.6	67	e.	7	781	−22.3	54	ene.	10	679	−28.0	36			590	−31.3	32			513	−33.7	33		
8	1,020	−35.8	78			970	−23.7	46			908	−18.9	49																						
9	1,015	−31.1	81	sw.	2	965	−11.2	54	se.	4	904	−13.1	48			795	−14.9	38			693	−13.3	59			608	−14.8	77			533	−21.4	78		
10	1,011	−20.1	86	calm	0	960	−20.2	80	n.	1	900	−18.0	73	nnw.	7	788	−18.8	79	nnw.	10	687	−21.3	44	nnw.	17	600	−27.9	40			521	−31.0	34		
11	1,019	−35.1	80	calm	0	969	−20.0	55	ene.	4	907	−19.0	56	ene.	10	793	−18.9	38	ne.	8	690	−19.6	33	nne.	21	603	−23.0	32			527	−28.2	31		
12	1,016	−30.2	81	calm	0	965	−12.4	48	e.	9	906	−11.0	43	ese.	12	796	−10.9	33	e.	13	698	−15.4	31	ene.	14	610	−20.1	37	ne.	20	513	−25.3	33		
13	1,010	−26.8	84	wnw.	1	961	−16.0	77	e.	10	901	−8.9	69	ese.	17	795	−3.2	34	ese.	14	698	−4.9	31	e.	13	612	−7.2	30	ene.	11	539	−12.0	29	e.	15
14				n.	3				ese.	6				e.	13				ene.	10				ese.	13				e.	21				
15	1,012	−22.2	82	nnw.	2	965	−14.7	60	ese.	4	902	−11.0	50	e.	7	794	−10.8	37	ene.	13	695	−11.1	39	e.	14	609	−15.6	35	ene.	11	533	−25.0	30	e.	12
16	1,007	−30.6	79	nne.	1	960	−10.5	54	e.	6	900	−9.9	48	e.	14	792	−9.0	40	ene.	11	693	−12.1	28	ne.	10	607	−20.0	24	nne.	12	529	−28.3	24	n.	4
17	1,007	−28.9	80	calm	0	956	−21.0	74	ene.	7	895	−14.7	66	e.	13	784	−17.6	56	ene.	13	684	−22.2		ne.	14	598	−25.4				520	−28.9			
18	1,008	−30.6	78	n.	3	959	−19.8	77	ene.	7	898	−14.0	70	ene.	12	787	−18.5	61	ene.	14				ne.	14										
19	1,006	−19.3	40	ene.	3	957	−19.2	42	ene.	13	895	−19.2	45	e.	15	783	−21.7	46	e.	28															
20	992	−19.2	42	ene.	5	945	−16.9	48	ene.	13	883	−17.6	47	e.	16	775	−13.0	50	e.	19	679	−15.2	43	e.	9	593	−21.2	38			517	−27.7	31		
21	990	−15.8	64	calm	0	945	−9.8	53	e.	4	885	−8.7	50	se.	4	777	−10.7	50	sw.	6	681	−18.2	49	ssw.	11	594	−21.6	46			518	−26.6	44		
22	976	−8.4	74	wsw.	1	933	−5.1	61	ese.	5	875	−.7	46	se.	10	772	−5.7	51	ssw.	11	677	−11.3	57	ssw.	13	592	−17.2	63			518	−24.0	65		
23	981	−11.6	94	sse.	2	936	−10.7	85	e.	7	878	−9.6	72	ese.	10	771	−13.2	71	wsw.	2	675	−16.3	71	sw.	11	590	−17.6	75			515	−24.7	81		
24	969	−9.0	97			925	−7.7	98			868	−6.4	100			763	−7.7	97			670	−12.8	100			585	−19.9	86			512	−23.7	75		
25	976	−12.1	88			929	−13.0	85			871	−11.1	76			766	−4.3	62			674	−10.6	60			588	−18.2	60			515	−26.0	63		
26	992	−22.8	73			944	−21.5	75			882	−19.7	76			773	−16.0	80			677	−16.2	81			592	−20.7	75			516	−21.9	67		
27	1,001	−20.1	70	nw.	1	952	−20.4	66	ne.	3	892	−18.8	63	ne.	10	783	−9.9	77	sw.	6	684	−14.1	83			600	−19.7	77			524	−24.8	73		
28	983	−4.0	75	n.	1	942	3.0	46	ese.	9	885	.7	42	s.	6	778	−6.3	65	s.	12	683	−10.7		sw.	18	600	−16.0		sw.	27	527	−20.6			
Mean	1,003	−25.0	77			955	−17.5	64			894	−15.0	61			784	−15.3	55			685	−18.6	52			598	−23.3	50			522	−28.7	48		

Date	6,000 meters					7,000 meters					8,000 meters					10,000 meters					12,000 meters					14,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	452	−40.2				391	−43.6				338	−48.7																		
3	439	−42.3				378	−44.7																							
6	450	−39.5	26			388	−42.7				335	−49.4																		
7	444	−33.2	32			385	−34.9	29																						
9	465	−26.8	74			407	−32.1	72			352	−40.1	67																	
10	450	−40.6				389	−43.4																							
12	463	−29.3	33			402	−34.7	29			348	−37.4	27																	
13	473	−16.7	28	e.	15	413	−21.2	28	e.	14	362	−25.4	27			272	−34.3	25			203	−40.0	26			152	−38.4	26		
15	463	−33.4	29			402	−32.9	32			349	−37.1	32																	
16	459	−36.0				397	−41.6				342	−49.7				251	−55.8				182	−57.2				133	−59.2			
17	451	−33.8				391	−36.9				339	−41.6				252	−41.5				188	−38.0				140	−36.7			
20	448	−31.7	27			390	−36.3	34			338	−42.2																		
21	451	−29.2	38			392	−33.6	35			341	−37.5	34			253	−42.6				188	−42.3								
22	450	−30.8	53			391	−35.8	45			339	−39.5				252	−45.7				187	−41.2				139	−40.3			
23	449	−26.0	69			390	−30.3	60			341	−40.1	57			253	−41.6				189	−39.5				141	−37.2			
24	446	−29.2	75																											
25	448	−35.0	62																											
26	449	−26.7	59			392	−33.0	56			340	−38.8				252	−43.9				187	−40.6								
27	455	−28.4	68			397	−32.3	64			343	−35.0	59			256	−45.7				189	−46.5				140	−45.9			
Mean	454	−33.6	44			394	−37.4																							

ADDENDA FOR FEBRUARY 23

16,000 meters		18,000 meters	
P	T	P	T
105	−40.4	79	−39.8

AIRPLANE OBSERVATIONS

Date	Surface 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
3	1,010	−38.7	70	n.	2	959	−26.8	78	n.	2	895	−27.8	82	nw.	2	778	−30.4	75	nnw.	4	674	−34.8	63	nnw.	8	584	−40.8				505	−45.5			
6	1,021	−44.6	55	calm	0	970	−27.8	58	ene.	2	905	−25.0	57	ene.	5	790	−23.6	59	ne.	12	689	−26.2	53			589	−32.0	47			518	−36.4	42		
9	1,016	−32.6	76	sw.	2	966	−18.2	68	se.	4	904	−11.3	46			794	−12.0	36			697	−11.0	84			611	−16.2	95			534	−22.3	89		
12	1,016	−33.1	67	nw.	1	968	−11.0	58	e.	9	905	−11.0	50	e.	8	796	− 8.6	36	ene.	12	699	−14.0	32			611	−18.6	42			534	−23.8	44		
15	1,012	−31.0	69	nnw.	2	964	−13.7	67	ese.	4	903	−14.0	61	e.	7	791	− 9.6	54	ene.	13	695	−11.7	38	e.	14	608	−17.9	32	ene.	11	531	−26.7	30	e.	12
18	1,008	−33.9	74	n.	3	959	−14.4	75	ene.	7	899	−15.8	69	ene.	12	785	−21.6	66	ene.	14	684	−30.6	72	ne.	14	593	−34.3	63			514	−38.6	54		
21	990	−20.1	77	e.	1	944	−12.3	70	ese.	3	884	− 8.3	64	ese.	7	777	− 8.0	65	ssw.	4	683	−16.5	79	s.	5	596	−21.3	72			519	−27.8	68		
24	969	− 9.5	100			925	− 8.6	100			869	− 1.1	83			764	− 6.6	83			671	−13.9	89			587	−19.5	83			513	−25.7	76		
27	1,000	−20.4	72	nw.	1	951	−21.2	72	ne.	3	890	−16.4	70	ne.	10	781	− 7.7	91	sw.	6	685	−13.1	98			601	−16.8	91			525	−20.9	90		

TABLE 4.—*Free-air data for standard levels above sea level obtained by means of airplane, radiosonde and pilot-balloon observations, winter 1937–38*—Continued

MARCH 1938

RADIOSONDE OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	982	−2.8	67	e.	3	939	2.0	55	e.	9	882	7.0	45	se.	14	781	3.8	43	sse.	11	637	−4.6	43	ssw.	10	604	−12.5	42	ssw.	11	530	−19.9	42	.....	...
2	981	−7.2	77	nw.	3	939	0.6	58	ese.	5	880	6.4	41	ese.	11	780	4.1	35	ese.	17	687	2.8	28	ese.	14	608	−3.0	28	ese.	16	535	−12.0	25	.....	...
3	990	−1.8	60	n.	1	945	−1.9	60	e.	2	887	−2.0	60	ese.	6	783	−4.0	55	ese.	2	687	−9.0	59	sse.	5	602	−18.6	60	sse.	11	528	−24.0	54	sse.	13
4	997	−10.4	97	n.	3	951	−4.5	65	ese.	2	894	−3.5	66	ese.	2	789	−6.0	65	s.	2	690	−10.2	64	se.	5	605	−14.1	63	.....	...	531	−18.4	62	.....	...
5	1,006	−10.8	98	calm.	0	960	−5.0	71	ese.	1	901	−3.8	66	w.	1	795	−5.0	47	wnw.	2	699	−9.9	30	sw.	2	610	−14.4	24	ssw.	6	536	−22.0	21	.....	...
6	1,006	−7.8	96	calm.	0	959	−8.0	85	e.	8	900	−8.4	69	e.	7	794	−9.1	35	se.	4	695	−11.0	34	n.	1	609	−17.6	33	nw.	10	531	−24.1	31	nw.	14
7	1,001	−12.7	96	n.	3	955	−9.0	76	e.	4	896	−4.1	51	e.	8	790	−5.0	32	ene.	4	691	−12.4	28	nne.	5	606	−21.4	30	n.	8	530	−25.4	30	.....	...
8	992	−5.6	65	w.	2	949	−4.6	59	ese.	6	890	−3.2	50	se.	6	783	−8.1	44	s.	5	686	−12.9	34	ese.	12	601	−18.5	34	ese.	12	526	−23.9	32	se.	16
9	981	−10.9	83	calm.	0	938	−11.6	79	e.	6	877	−12.5	72	ese.	5	769	−14.2	60	sse.	2	672	−16.1	46	se.	3	587	−22.0	44	se.	9	512	−28.0	41	.....	...
10	975	−7.9	70	nw.	1	931	−6.0	62	ssw.	1	874	−6.2	65	sse.	2	769	−10.0	69	s.	3	674	−14.6	76	ssw.	5	588	−22.1	73	.....	...	513	−24.6	68	.....	...
11	980	−7.8	...	calm.	0	936	−9.2	...	ene.	2	878	−11.0	...	w.	1	770	−15.0	...	w.	2	672	−19.1	...	nw.	2	586	−24.0	...	nw.	2	510	−29.8	...	.....	...
12	978	−5.5	85	ne.	2	932	−7.1	83	e.	8	874	−9.5	81	se.	6	769	−14.0	77	.....	...	672	−18.7	72	.....	...	585	−24.7	70	.....	...	510	−32.0	70	.....	...
13	968	−12.9	86	nnw.	4	925	−9.9	72	ese.	5	866	−7.0	55	ese.	8	760	−12.9	50	e.	3	664	−19.1	48	ene.	1	580	−25.0	42	se.	6	505	−28.5	39	s.	3
14	966	−15.2	88	ssw.	1	921	−18.0	72	ene.	6	860	−20.4	50	ese.	4	751	−21.3	40	ene.	7	657	−21.5	42	sse.	3	571	−23.9	44	sw.	10	498	−30.8	42	ssw.	9
15	976	−14.2	82	calm.	0	930	−13.7	71	ene.	3	870	−12.9	60	e.	2	762	−14.9	72	.....	...	668	−18.5	74	.....	...	582	−21.6	73	.....	...	511	−23.6	66	.....	...

Date	6,000 meters					7,000 meters					8,000 meters					10,000 meters					12,000 meters					14,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
1	463	−23.3	42	.....	....	403	−28.8	42	....	....	348	−36.0	42	....	....	259	−49.4	....	....	....	192	−40.5	....	....	....	143	−40.7	....	....	....
2	469	−15.5	23	.....	....																									
3	459	−27.1	50	.....	....	399	−32.8	47	....	....	345	−41.0	....	....	....	255	−51.6	....	....	....	187	−54.1	....	....	....	137	−53.6	....	....	....
4	463	−27.4	62	.....	....	403	−33.0	61	....	....	349	−37.8	....	....	....															
5	467	−26.0	24	.....	....	405	−30.7	22	....	....	352	−35.0	22	....	....	264	−46.1	....	....	....										
6	463	−29.4	30	nw.	13	402	−38.4	....	....	....	347	−39.8	....	....	....	258	−42.5	....	....	....	192	−38.8	....	....	....					
7	461	−28.9	32	.....	....																									
8	458	−29.0	32	.....	....	398	−34.2	30	....	....	344	−38.0	26	....	....	256	−39.8	26	....	....										
9	444	−35.5	39	.....	....	385	−38.1	....	....	....	333	−40.8	....	....	....															
10	447	−29.6	68	.....	....	388	−33.6	67	....	....	336	−38.0	64	....	....	251	−38.1	62	....	....	188	−35.0	60	....	....	142	−33.1	50	....	....
11	443	−35.7	....	.....	....	384	−41.8	....	....	....	331	−43.9	....	....	....	245	−41.5	....	....	....										
12	442	−36.5	70	.....	....	382	−41.5	....	....	....	330	−46.0	....	....	....	244	−43.4	....	....	....	181	−40.0	....	....	....					
13	439	−29.2	39	.....	....	381	−33.4	40	....	....	330	−38.8	38	....	....	247	−40.4	37	....	....	184	−36.3	37	....	....	138	−32.8	32	....	....

ADDENDA, RADIOSONDE OBSERVATIONS

Date	16,000 meters			18,000 meters		
	P	T	R	P	T	R
3	101	−51.6	.....	.....	.....	.....
10	106	−31.0	55	80	−30.5	52
13	104	−30.0	30	.....	.....	.....

AIRPLANE OBSERVATIONS

Date	Surface, 135 meters					500 meters					1,000 meters					2,000 meters					3,000 meters					4,000 meters					5,000 meters				
	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V	P	T	R	D	V
2	981	−11.8	85	nw.	3	938	7.0	43	ese.	5	883	4.8	39	ese.	11	780	6.5	30	ese.	17	689	0.1	23	ese.	14	606	−8.4	22	ese.	16	532	−17.0	21	.....	...
5	1,006	−14.7	89	calm	0	960	−3.1	80	ese.	1	902	−1.8	71	w.	1	794	−5.0	45	wnw.	2	698	−10.7	32	sw.	2	611	−16.7	26	ssw.	6	534	−24.2	23	.....	...
8	993	−14.3	85	ssw.	2	949	−1.8	53	e.	10	890	−5.1	55	ese.	11	783	−9.5	45	e.	14	687	−14.0	43	e.	16	601	−21.8	40	ese.	15	523	−29.7	40	.....	...
12	978	− 6.6	87	ne.	2	933	−7.0	82	e.	8	875	−10.8	95	se.	6	767	−15.2	82	.....	...	671	−23.0	84	.....	...	583	−30.6	86	.....	...	506	−37.6	80	.....	...

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